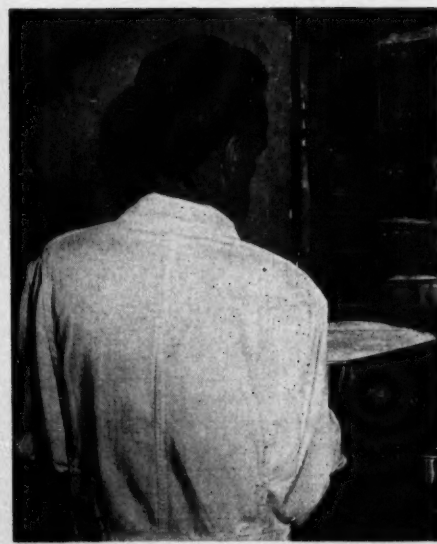
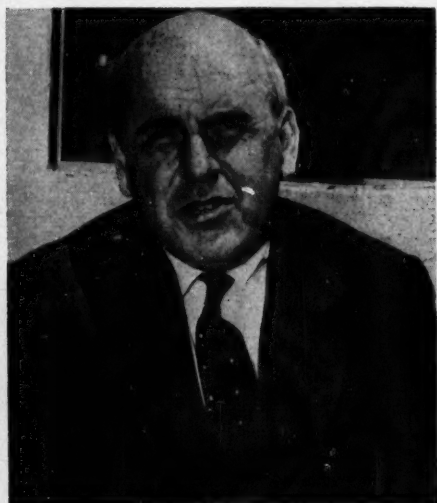


Chemical Week

December 5, 1953

Price 35 cents



Banker-statesman McCloy urges chemical industry to think globally, not provincially p. 15

Why are so many executives changing jobs? Here's a round-up of prime reasons p. 20

There's a rough, tough patent battle frothing up for push-button shave creams p. 48

Acetylene burgeons as end uses diversify, production methods compete p. 71

Oil well brine beats sea water as raw material for unique iodide project p. 77

SOLVAY

Reg. U. S. Pat. Off.

Flake • Small Flake • Solid

CAUSTIC

POTASH

WHITE

in color —

exceptionally

LOW IN IRON!

Today, send for test samples and make your own comparison tests. Prove to yourself—**SOLVAY Caustic Potash is your *best buy!***

We are always ready to assist you with **SOLVAY's** famous Technical Service as well as the most complete, authentic information available on the applications of **SOLVAY Caustic Potash** to your particular situation.

- Also available in liquid form:
49-50% in Tank Cars
45% in Liquid Drums



Soda Ash • Caustic Potash • Potassium Carbonate
Caustic Soda • Calcium Chloride • Sodium Nitrite
Cleaning Compounds • Ammonium Bicarbonate
Chlorine • Snowflake® Crystals • Sodium Bicarbonate
Ortho-dichlorobenzene • Ammonium Chloride
Para-dichlorobenzene • Monochlorobenzene

Get All the Facts! Send for Test Samples Today!



SOLVAY PROCESS DIVISION

ALLIED CHEMICAL & DYE CORPORATION
61 Broadway, New York 6, N. Y.

Gentlemen:

Please send me the following at no cost or obligation:

SAMPLES: (90-92%) ☐ Solid ☐ Flake ☐ Small Flake

☐ Have your Technical Service contact me.

☐ FREE BOOK—"Caustic Potash and Potassium Carbonate."

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

AN-12

Announcing Foster Wheeler's new MOUNTAIN TOP PLANT...

*completely tooled to effectively meet
your most exacting needs for steam generators,
heat-transfer and process equipment!*

ANTICIPATING your requirements for more efficient central station, industrial and process components, Foster Wheeler has installed in this new plant, near Wilkes-Barre, Pa., the latest, most modern equipment, such as: the 8000-ton beam press, 2 million volt x-ray facilities, the newest developments in submerged arc-welding and high-speed drilling

equipment, 83½ foot long stress-relieving furnace and others shown here.

This modern equipment, the plant's proximity to steel supplies, and its strategic location for direct rail shipment to all areas, assure you of fast, economical, high-quality fabrication to meet your specifications for the largest, heaviest drums and pressure vessels.

1. 8000-TON BEAM PRESS

Hydraulically operated, will bend steel plates 40' long, 8" thick.

2. PLATE EDGE PLANER

Will take the longest available plates, for cutting welding grooves.

3. OVERHEAD CRANES

Four large cranes capable of lifting the heaviest and largest equipment easily.

4. DOUBLE HOUSING PLANER

Highest speed planing.

5. AUTOMATIC WELDING MACHINES

Submerged-arc, automatic flux recovery-type, mounted on track.

6. 500-TON CRIMPING PRESS

For cold-bending edge of plate preparatory to rolling.

7. VERTICAL BORING MILL

Will machine work 12' in diameter. Maximum swing 151".

8. BENDING ROLLS — PINCH TYPE

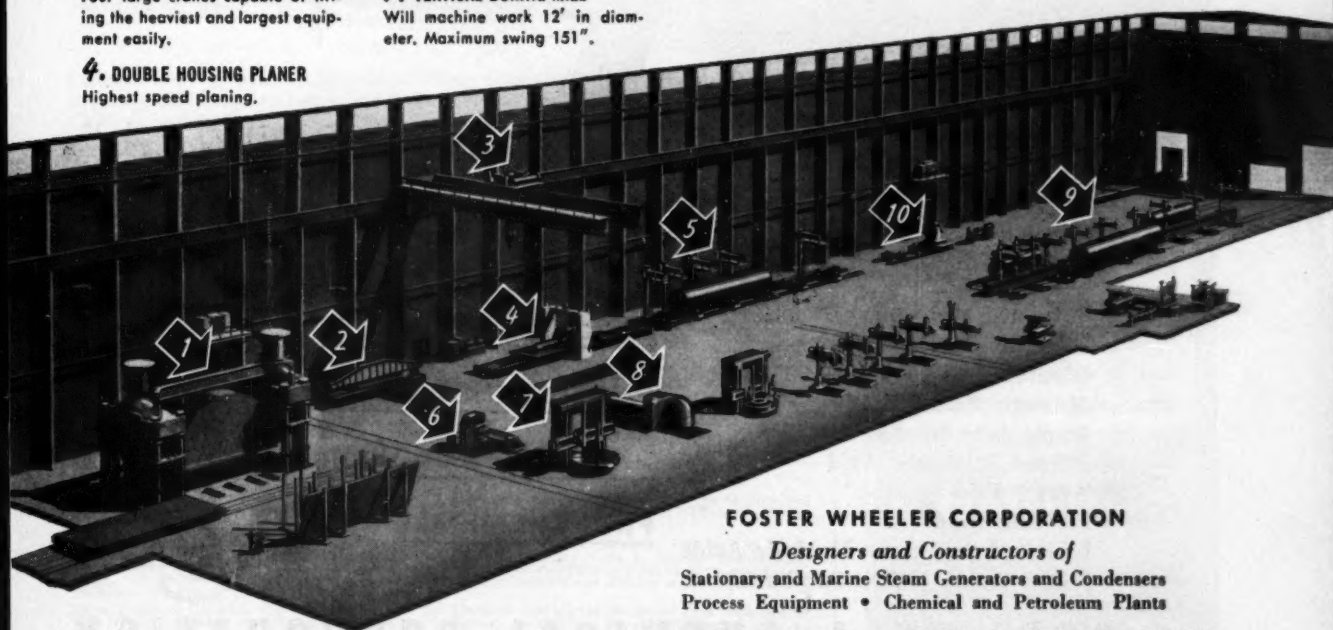
By hot or cold rolling will form cylinders for medium-pressure vessels.

9. HIGHEST SPEED DRILLS — RADIAL TYPE

These are mounted on ways and tracks, power positioned.

10. DRUM FACING MACHINE

Quick preparation of ends of cylinder for assembly with heads.



Artist's sketch of the main bay of the new Mountaintop, Pa. plant. 800' long, 90' wide, 75' high.

FOSTER WHEELER CORPORATION

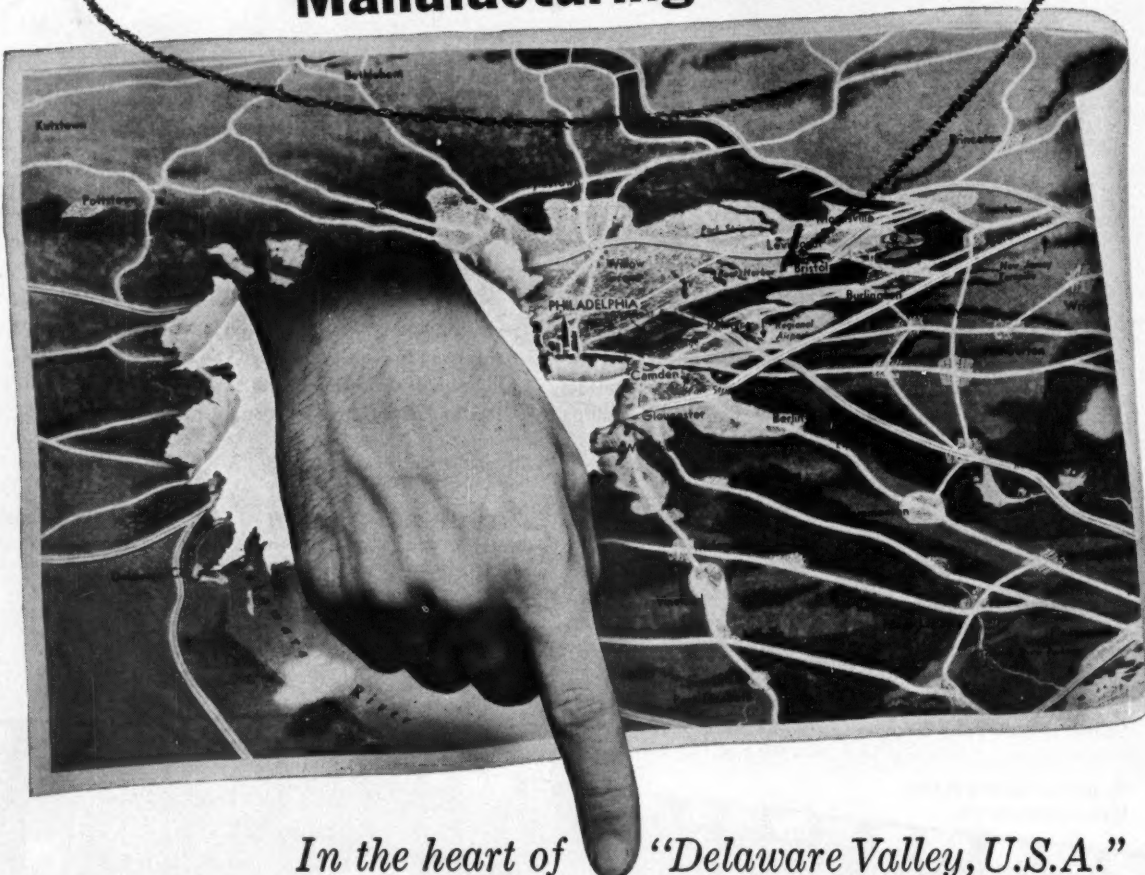
Designers and Constructors of

Stationary and Marine Steam Generators and Condensers
Process Equipment • Chemical and Petroleum Plants

NEW YORK • LONDON • PARIS • ST. CATHERINES, ONTARIO

FOSTER WHEELER

Productions from Cornwell's Manufacturing Plant



In the heart of "Delaware Valley, U.S.A."

Cornwell Manufactures

ACIDS

Sulphuric Acid 60° 66° 98%
Electrolyte Acids—all strengths
Oleums 10% 20% 25% 65%
Muriatic Acid 20°
Nitric Acid 36° 38° 40° 42°
Phenol Sulphonic Acid
Acetic Acid
Pickling Acids
Inhibited Sulphuric, Muriatic Acids
Mixed Acids (Nitric-Sulphuric)

ALKALIES

NITROGEN PRODUCTS

PHOSPHORIC ACID AND PHOSPHATES

ANHYDROUS SODIUM SULPHATE

FINE CHEMICALS



CORNWELL CHEMICAL CORPORATION

EXECUTIVE OFFICES . . . 24 East 38th St., New York 16. MUrray Hill 3-0174

SALES OFFICES . . . Philadelphia, Pa.—Torresdale 4-7358 744 Broad Street, Newark, N. J.—Market 4-2776
and Cornwells Heights, Pa.—Cornwells 0700

Chemical Week

Volume 73 • December 5, 1953 • Number 23

OPINION	4	SPECIALTIES	48
NEWSLETTER	11	DISTRIBUTION	59
BUSINESS & INDUSTRY	15	MARKETS	67
RESEARCH	40	PRODUCTION	77



PUBLISHER Wallace F. Traendly
 EDITORIAL DIRECTOR Sidney D. Kirkpatrick
 EDITOR W. Alec Jordan
 MANAGING EDITOR Howard C. E. Johnson
 ASSOCIATE EDITOR Donald P. Burke

DEPARTMENT EDITORS

Business & Industry: Jane H. Cutaia, Homer Starr • **Distribution:** Raymond H. Layer
Markets: Anthony J. Piombino • **Production:** Donald P. Burke • **Research:** Ralph R. Schulz • **Specialties:** J. R. Warren • **Art and Editorial Make-up:** Donald R. Thayer
 Copy Editor: William M. Mullinack

EDITORIAL ASSISTANTS

Robert C. Hosford • George Kahl, Jr. • Richard Ringheim • Kay Sebiry
 Michael L. Yaffee

NATIONAL NEWS

Chicago, Frank C. Byrnes • Cleveland Bureau Chief, Robert E. Cochran • Houston Bureau Chief, James A. Lee • San Francisco, Elliot Schrier • Washington Bureau Chief, George B. Bryant, Jr. • Finance & Statistics, Douglas Greenwald, Robert P. Ulin • Correspondents in 55 principal cities

WORLD NEWS

J. K. Van Denburg, Jr. (editor) • London, Nathaniel McKitterick • Paris, Ross Hazel-tine • Frankfurt, Gerald Schroeder • São Paulo, Lionel Holmes • Mexico City, John Wilhelm • Tokyo, Alpheus W. Jessup • Manila, Herbert Leopold • Corre-spondents in 44 capitals and principal cities

CONSULTING EDITORS

Lawrence W. Bass • Benjamin T. Brooks • John V. N. Dorr • Charles R. Downs
 Ernest W. Reid • Norman A. Shepard • Roland P. Soule • Robert L. Taylor

Chemical Week (including Chemical Specialties and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc. James H. McGraw (1860-1948), founder. Publication Office: 1309 Noble St., Phila-delphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Donald C. McGraw, President; Willard Chavaler, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph E. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription communications to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions \$5.00 a year; \$2.00 for two years; \$10.00 for three years. Canada \$6.00 a year; \$12.00 for two years; \$24.00 for three years. Other Western Hemisphere Countries \$15.00 a year; \$25.00 for two years; \$30.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$60.00 for three years. Entered as second class matter December 29, 1951, at the Post Office at Philadelphia 23, Pa., under the act of March 3, 1879. Printed in U.S.A. Copyright 1953 by McGraw-Hill Publish-ing Co., Inc.—All rights reserved.

SEBACIC ACID

IS A

PURE CHEMICAL



HARCHEM SEBACIC ACID
 is a **PURE** chemical suitable
 for your most exacting devel-
 opments.

OUTSTANDING FOR

High Temperature
 Stability

Built-in Flexibility

Maximum Light
 Resistance

so essential to High Polymer
 Plasticizers, Synthetic Lubri-
 cants and production of your
 other high quality products.



PLASTICIZERS

HARDESTY CHEMICAL DIVISION

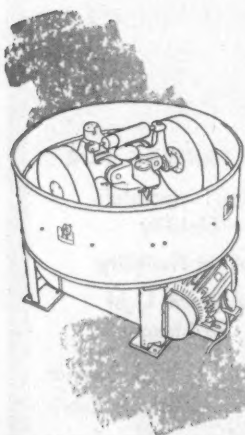
W. C. HARDESTY CO., INC.

41 East Forty-Second St., New York 17, N. Y.

Try this Simple Test...



**to prove Simpson Mix-Mullers
provide efficient,
accurate blending**



Run a spatula through a small amount of the product you are now mixing. Unmixed smears and tell-tale lumps, as shown in the lower smear, mean your product is *not* being thoroughly mixed and blended. Note the top smear . . . it's smooth . . . thoroughly and evenly blended . . . the way your product would be if it were mixed in a Simpson Mix-Muller.

This simple test proves that the intensive rubbing and smearing action of a Simpson Mix-Muller will do a more thorough, controlled mixing job on your product . . . similar to the long proven mortar and pestle mixing method. Simpson Mix-Mullers are equipped with spring loaded mullers . . . adjustable for variable pressure . . . providing maximum flexibility to meet every mixing requirement . . . in batch capacities from 1/10 to 60 cu. ft.

Investigate controlled mulling with Simpson Mix-Mullers. Write today for full information.

Use our Free Laboratory Service . . .

We have a completely equipped laboratory for accurately determining the results of mulling your materials in Simpson Mix-Mullers. A confidential test will prove what these modern mixers can do for you. Write for details . . . no obligation, of course.



SIMPSON MIX-MULLER® DIVISION

NATIONAL ENGINEERING CO. (Not Inc.)

612 Machinery Hall Building

CHICAGO 6, ILLINOIS



OPINION . . .

Chemists' Souls

TO THE EDITOR: In your article on "A Baker's Dozen (Nov. 21), a chemical management man is quoted as having told Chicago chemists that by joining a technical union, a chemist "may keep his job, but he's lost his soul." Poppycock!

By joining a scientific employees' association or union, the chemist *gains* a voice through a democratic organization in actively influencing his conditions of employment. He *gives up* the "prerogative" of working at a salary below what his position is worth and of accepting any conditions, including discharge, that his management may arbitrarily impose upon him.

Without fear of reprisal, since he is part of a group of individuals having a strong community of interests, the individual chemist in a professional union can afford to maintain his dignity, integrity, and self-respect.

JOHN E. TAFT
Vice-President

Engineers & Scientists of America
East Williston, L. I., N.Y.

Tree Colorants

TO THE EDITOR: You published a brief item (Oct. 13) on a Russian report that a scientist there has developed a technique to dye the wood of living trees . . . by injecting colorants into the sap stream . . . You also published a letter on the subject from a reader (Nov. 14) . . . who was curious about the procedure . . .

You might be interested to learn that the method of dyeing or imparting chemicals into living trees by means of holes drilled into the tree trunk—preferably in a grid—is not, in itself, new . . .

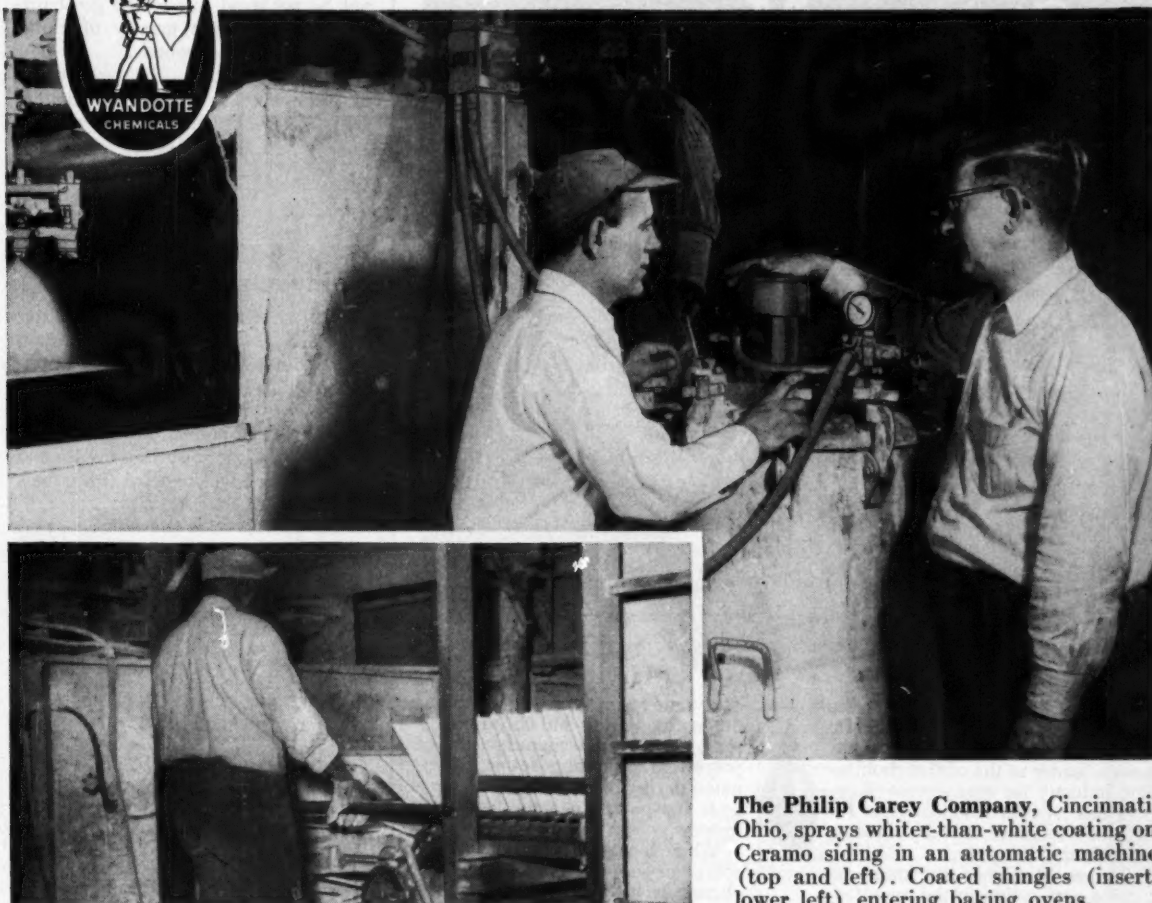
During my time at the Forest Academy in Tharand, Germany, this work was done by Prof. Wislicenus. I, myself, have seen wood dyed in this way. There was some difficulty in having the dye penetrate evenly throughout the wood. I understand this was later overcome . . . but the goal—to imitate tropical woods—could

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.



Dependable Source of Chemical Raw Materials



The Philip Carey Company, Cincinnati, Ohio, sprays whiter-than-white coating on Ceramo siding in an automatic machine (top and left). Coated shingles (insert, lower left) entering baking ovens.

How Wyandotte Purecal helps make world's whitest Ceramic Siding

Ceramo, used as sidewalls in a new or old home, is the miracle material of the building industry. It won't burn, rot, warp, crack, or curl, and washing with ordinary soap and water keeps it looking sparkling white, year after year.

Ceramo is an exclusive product of The Philip Carey Manufacturing Co., Cincinnati, Ohio.

It is a ceramic-glazed, asbestos-cement siding of unusual whiteness. In fact, light reflectivity tests, recommended by U.S. Bureau of Standards, rate Ceramo 90.7%. Published figures rate lead zinc white paint, 2 coats — 66% . . . titanium oxide white paint — 75%.

To get a lasting white finish, requires

not only highest quality ingredients but also a white-white extender and a practically permanent coloring agent. Wyandotte PURECAL* is both! PURECAL is Wyandotte's precipitated calcium carbonate — the whitest pigment extender known . . . completely free from the metallic impurities that cause discoloration upon aging.

This manufacturer's experience has been that Wyandotte PURECAL serves both these prime purposes more economically than any other ingredient of comparable quality.

How about your business? Can you profit from PURECAL as an extender in paint, paper, rubber, or in your new products? Write Wyandotte for free

samples and data. State your requirements—our Research Department may have valuable data for you. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

*Reg. U.S. Pat. Off.

 **Wyandotte**
CHEMICALS

HEADQUARTERS FOR ALKALIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Chlorine
Calcium Carbonate • Calcium Chloride • Glycols • Synthetic
Detergents • Agricultural Insecticides • Soil Conditioners
Other Organic and Inorganic Chemicals

Styrene Monomer Starts at Koppers



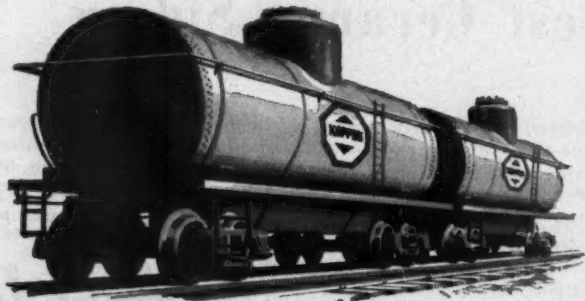
● Styrene Monomer, which traces its chemical origin to coal, is a basic product at Koppers, for Koppers has been a leader in the coal carbonization industry for many years. Koppers has its own raw materials for Styrene Monomer, thereby assuring a continuity of supply.

Styrene Monomer has found extensive application in the manufacture of polystyrene plastics and synthetic rubbers, including GR-S Rubber for tires and other rubber-styrene copolymers for most commercial rubber applications including hose, shoe soles, floor tiles, and rubber mechanical goods.

It is also used in the manufacture

of styrene resins for coating and impregnating porous and fibrous materials, and in the manufacture of polyester laminating resins, styrenated drying oils and styrenated alkyls for paints, enamels and varnishes.

When looking for a dependable source of supply for vital industrial chemicals, it's good business to look to the leaders. Koppers, one of the country's major manufacturers of Styrene Monomer, is prepared to give you the quickest, best service possible, because its producing plant is centrally located. Styrene is supplied in tank-car, tank-truck, and 55-gallon drum quantities.



KOPPERS COMPANY, INC.

Chemical Division, Dept. CW-123, Pittsburgh 19, Pennsylvania



Koppers Chemicals

SALES OFFICES: NEW YORK • BOSTON • PHILADELPHIA • ATLANTA
CHICAGO • DETROIT • LOS ANGELES

OPINION

not be achieved due to the great difference in specific gravity of European and tropical woods.

I believe, further, that large tracts of trees were treated in the Solling area. This work was done in the '30s.

H. W. GRIMMEL
President,
Metro Dyestuff Corp.
West Warwick, R.I.

Re-Invented

TO THE EDITOR: . . . Re the letter from Mr. T. L. Bonnett (Nov. 14) on wood coloring in Russia by the application of dyes to the living tree . . .

This was tried up in Maine some years ago . . . sometime after World War I . . . Without putting my tongue in my cheek I will say that this equals most Russian inventions . . .

The process kills the tree . . . and I imagine that a dye suitable for distribution in an aqueous system would not be very resistant in the finished wood product . . .

G. R. OWENS
Phoenixville, Pa.

Two in Arizona

TO THE EDITOR: We enjoyed the excellent news story about Western Chemical Co., Phoenix, Ariz. (Oct. 24) . . . It was a good reporting job and a very interesting article. This firm is the largest but not "the only distributor of chemicals in the state of Arizona."

Our company was formed in 1946 . . . has served the southern section of Arizona since that time . . . growing from two men to 15 employees . . .

We handle sanitary supplies, industrial chemicals and agricultural chemicals, have a basic distributor status in each category . . .

WILLIAM C. SKOUG
President
Copper State Chemical Co.
Tucson, Ariz.

It Follows . . .

TO THE EDITOR: You have published a good deal of information on tariffs . . . and many chemical men have suggested that our tariff setup is rather confused. So this might interest you:

Ping pong balls are of many breeds. Ordinary white balls used for table tennis have had, and still have, a 20% tariff on them . . . but colored ping pong balls have been reclassified as ammunition.

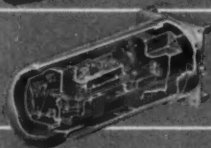
Apparently, they are quite frequently used in pop guns . . . Tariff on these has been raised from 20% to 50%. If

FACTS ON INFRARED FOR THE PROCESS PLANT

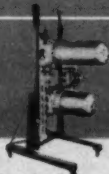
THE ONLY COMPLETE RANGE OF INFRARED
INSTRUMENTS TO MEET ALL REQUIREMENTS



FOR THE PILOT PLANT—Model 14 Multi-Component Analyzer—
Continuously records the concentration of up to six components in a pilot process stream on a six-minute cycle. Ideal for tracking the effects of temperature, pressure, etc., changes in a pilot stream.



FOR THE PROCESS PLANT—Model 93 BICHROMATOR® Analyzer
—For continuous control of liquid or gas streams. Records the ratio of any two wavelengths chosen. Thermostatted; enclosed in explosion-proof containers.



FOR THE PROCESS PLANT—Model 105 TRI-NON® Analyzer
—Highly stable and sensitive. Suitable where there is considerable interference from stream components. Thermostatted; enclosed in explosion-proof containers.

*Trademark The Perkin-Elmer Corporation

Please send the bulletins checked

Model 14..... Models 93 and 105.....

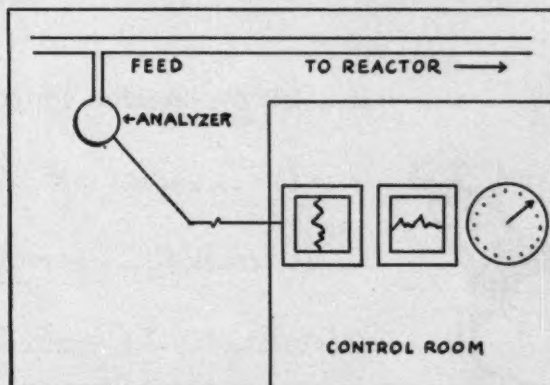
NAME.....
TITLE.....
COMPANY.....
ADDRESS.....
.....

Does Feed Stock Variation Upset Your Process Stream?

If it does, monitor your feed streams with infrared analyzers. They will record continuously the concentrations of important components and the information so gained may be used to control the process stream variables.

Infrared analyzers can also assist in cost accounting. If you are buying feed gas on the basis of its concentration of a particular component, an analyzer will provide an accurate record of the amount actually delivered over any period.

Let us show you how you can apply infrared analyzers to your particular streams. Perkin-Elmer experience in infrared instrumentation, both in process stream and laboratory, is unmatched by any other instrument manufacturer. If your problem can be solved by infrared methods, Perkin-Elmer can supply you with instrumentation specifically adapted for your process streams. Our application engineering facilities are at your service.



The Perkin-Elmer Corporation, 820 Main Avenue, Norwalk, Conn.
Southern Regional Office: New Orleans, Louisiana

For Optical Design and Electro-Optical Instruments

PERKIN  ELMER

*You use porcelain
to develop processes
in the laboratory.*



*You don't have to search for
substitute materials when you
engineer the process to plant
scale operation.*



*Use Lapp Chemical Porcelain.
It is low in initial cost, high
in serviceability... provides
"laboratory purity," protects
against corrosion and/or
contamination.*

Write for description and specifications

LAPP INSULATOR CO., INC., PROCESS EQUIPMENT DIVISION, 717 MAPLE ST., LE ROY, N. Y.



CHEMICAL PORCELAIN VALVES • PIPE • RASCHIG RINGS • PULSAFEEDER CHEMICAL PROPORTIONING PUMPS

OPINION

they are made of cellulose acetate, there's an additional tax of 1¢ per ball.

If ping pong balls are so mixed up how can we expect the schedules on chemicals to be apple-pie simple. . . . ?

D. R. MORRIS
New York, N.Y.

Weekend Painters

TO THE EDITOR: I have just read Mr. Stodder's letter on paint brush cleaners (Nov. 21) and want to tell you about one that I tried last night.

For the benefit of your readers who are chemists and engineers during the day and only painters and mechanics on the weekend, I suggest they have a look at, or try, a liquid called "Acqua-Hydro" You soak a hardened pork-bristle or camel's-hair brush in the liquid, take it out and flush it with water under the faucet, and the brush comes out soft and practically like new

SEYMOUR SCHWARTZ
President

S. Schwartz & Associates
New York, N.Y.

Freud Looms?

TO THE EDITOR: . . . Perhaps there's some Freudian significance in the caption "Psychometric Doodling" on the lead-off letter in your Nov. 7 issue . . .

When I was slinging a wet-bulb and dry-bulb thermometer with the Air Force Weather Service we always called it a psychrometer . . . and the tables we computed relative humidity from were called psychrometric tables.

They taught me in college that psychometrics were measurements of psychological factors like intelligence, memory, attitudes, etc. . . .

Could be you slipped up on an "r" . . . ?

ARNOLD M. PRICE
Hazard Advertising Agency
New York, N.Y.

Right as rain, one "r" was unslung, Freudianwise or otherwise.—Ed.

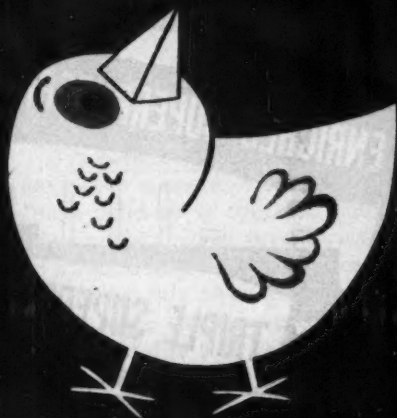
Peroxide Researchers

TO THE EDITOR: . . . You report a brief summary (Oct. 24) of work done on the oxidizing properties of hydrogen peroxide in trifluoroacetic acid You indicated that this was done at the National Institutes of Health The work was actually done at our laboratories

WILLIAM D. EMMONS
Head, Organic Chemistry Group
Rohm and Haas Co.
Huntsville, Ala.

hilton-davis

announces
the arrival of
a new
organic
compound



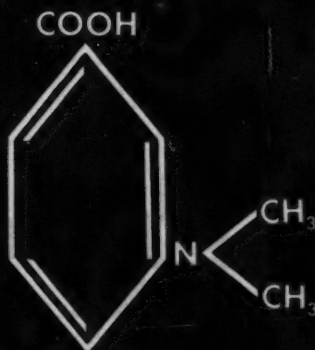
META-DIMETHYLAMINO BENZOIC ACID

suggested for use in the synthesis of insecticides, dyestuffs and pharmaceuticals... immediately available in pilot plant quantities... or in commercial quantities on special order.

PROPERTIES:

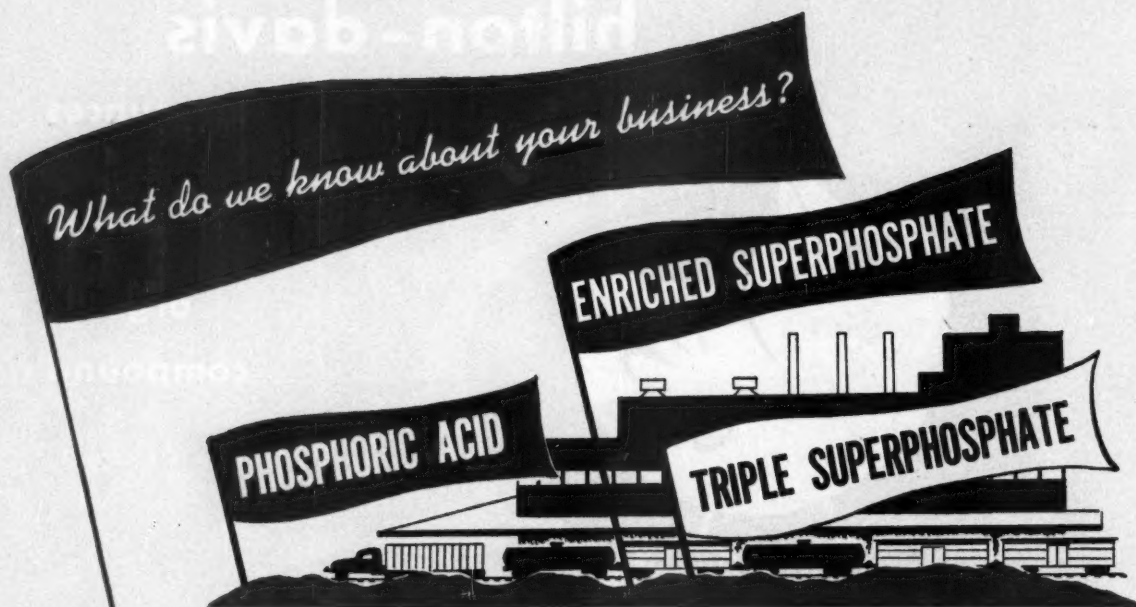
- $C_6H_4N(CH_3)_2COOH$; M.W. 165.19; M. P. 151-3°C
- crystalline solid
- insoluble in water
- soluble in alcohol and cellosolve
- minimum purity-99%

This is the first of a series of important new organic chemicals to be offered to industry by Hilton-Davis. You can be assured of uniform high quality in either pilot plant or commercial quantities. For complete information or technical assistance in the use of Hilton-Davis Meta-Dimethylaminobenzoic Acid write today.



THE  HILTON-DAVIS CHEMICAL CO. DIV.

2235 LANGDON FARM ROAD, CINCINNATI 13, OHIO



through Harte engineering know-how

The evident trend in fertilizers is toward more concentrated plant food. Phosphoric fertilizers are in an ever-increasing demand for use in higher analysis plant foods.

The Harte Company, one of the recognized leaders in fertilizer plant design and construction, is in a position of experience to engineer your phosphoric acid or triple superphosphate plants.

The Harte organization, though, offers more than experience. Harte-designed plants assure a minimum of capital investment, high operating efficiency, low operating cost. You will find, as others in the fertilizer industry have, that it will pay you high dividends to lay your problems before the Harte Company of engineering specialists. We can handle the complete job or any part—from site study, planning and architecture, to engineering, purchasing and construction management.

Call us to discuss your high-analysis fertilizer plant plans.

There is no obligation.

JOHN J. HARTE COMPANY | ENGINEERS
CONSTRUCTION MANAGERS

SPECIALISTS IN THE FOLLOWING PROCESSES: • Solvent Extraction Systems • Rubber Products • Vitamin Recovery • Synthetic Detergents
• Insecticide Plants • Clay Processing • Mixed Fertilizer Plants • Paper Mills • Electrolytic De-Tinning • Lime and Cement
• Phosphoric Acid Plants • Glass • Explosives • Petrochemicals • Food Canning Plants • Cotton Mills • Industrial Warehousing
• Steam Generating & Power Plants • Milk By-Products • Superphosphate Plants

284 TECHWOOD DRIVE, N. W., ATLANTA • NEW YORK • HOUSTON • MEXICO, D. F. • HAVANA • WASHINGTON, D. C.

NEWSLETTER

It's been fashionable to be gloomy about business prospects. And there have been a spate of factors to "justify" some dismal predictions: the defense build-up is over the hump, the Korean war is ended, farm income has slipped, some inventories have piled up, soft spots have been showing up here and there in our economy.

But by this week the gloomsters were beginning to backpedal. Why? They were confronted by some solidly cheerful statistics—gross national product for this year will hit a new high (\$368 billion); personal income will also be a record (\$285 billion). Moreover, there's been no appreciable slowing down in corporate expansion and modernization programs (CW, Nov. 7). The last, especially, is a cash-endorsed vote of confidence in the future.

It doesn't mean, however, that everything is going to be smooth sailing, chemically, next year. Some segments of the industry are overbuilt—temporarily, at least; some companies have plunged into businesses in which they have no basic position, little experience, no sales entree. That presages upsets—and disturbing news. And that type of news makes headlines, is remembered. The layoff of 100 men in Milwaukee gets more newspaper space than the hiring of 500 in Houston.

The price-cutting shenanigans of an order-hungry insecticide maker spread rumor-fast—far outpaces and outvolumes trade talk about the problems of a can't-meet-quota-delivery resin producer.

That's what most businessmen fear: overemphasis on the unusual, warped perspectives, a battering of business volume by psychological forces.

This they know too: selling's going to be tough, the dollars are going to go to the hustlers. And plenty of them are now hustling, and planning to hustle more in '54.

That's one thing that juts out in a just-completed (and soon to be released) analysis of the plans and operations of 120 prominent companies. Pikestaff-plain is the concern—harbored particularly by smaller companies—about the state of their own health.

A handful, and only a handful, have more than a dim idea as to their future volume, profits, taxes. Many are hazy on objectives ("to make money, of course"), haven't set up specific goals or routes to them. ("Planning is for government guys—we don't need it.")

But most recognized is this: conditions are going to change and companies are going to have to adjust to them. How? Some are streamlining organization charts and digging into marketing techniques, many are sprucing up (or inaugurating) market research plans.

It adds up simply to this: plain goals or not, the emphasis is going to be on hustling—sell, sell, sell.

That's raised another much-bruited question: How much trade with the Soviet bloc? That's been a question many countries have perennially been asking themselves, are now asking once more.

Italy has now signed an agreement with the Soviet Union calling for shipment by Italy of items including a large amount of essential oils,

tartaric acid, borates, synthetic fibers. Some of the products to be shipped in return: manganese, chrome, asbestos, naphtha, paraffin and non-Italian-produced essential oils.

Too, Italy has recently concluded a \$14-million barter deal with Communist China embracing pharmaceutical products—a major Italian export—as well as a Bulgarian agreement, with chemicals one of the items to be traded.

Willingness to part with such strategic items as manganese and chrome seems to indicate a change in Soviet trade policy: the Communists want more goods from the West, and, since they don't have enough of a wide range of nonstrategic goods to offer, are turning to strategic ones. But there are drawbacks: the Reds align their prices above free-world quotations, still time their agreements to make political hay.

•

Despite the demise of the worldwide sulfur shortage, the British government is still protecting its sulfuric acid makers that use anhydrite (CW, Nov. 28) and pyrites from their brimstone-using competitors. British cost of producing acid (100% basis) is estimated at \$25.50/ton from pyrites, \$22.70/ton from anhydrite, only \$19.90/ton from brimstone.

The Conservative government has been talking about putting an end to state trading of sulfur, giving it back to private commerce. But industry experts there are doubtful that unlimited imports will be allowed in any case. The Ministry of Materials contends that Frasch-mined sulfur should be imported only to the extent that it is needed to make up the acid deficit; thus higher-cost plants still seem assured of continued government protection.

•

The British government, with an eye to sharpening competition for world markets from Germany, Japan and the U.S., also is stepping up its support of scientific and industrial research.

The Dept. of Scientific and Industrial Research budget was frozen in 1951 at £5 million/year. DSIR will now reportedly get £6 million immediately for new facilities and a hike in the annual budget to over £6 million. Also, nuclear research costs will be borne by the new British Atomic Energy Commission, in effect giving DSIR another £500,000.

•

Speaking out again in support of its views, the Manufacturing Chemists' Assn. has added to its tariff program (CW, Nov. 21) a tax policy, which it has submitted to the Congressional Joint Committee on Internal Revenue Taxation. Most of the 14 recommendations apply generally to all business, but two specifically involve the chemical industry:

- Let companies set their own depreciation rates, subject only to a five-year minimum on real property.
 - Let companies choose whether to deduct research and development expenditures or to capitalize them.
-

New process, new product:

- A new process involving distillation, by Victor Chemical, to make a light-colored phosphorus pentasulfide. Victor will go into production of the compound, used largely in oil additives.
- Two new unsaturated secondary amines, by Armour's Chemical Div., made from tallow and soya oil. They liquefy more easily, are more soluble in organic solvents than their saturated counterparts.

. . . The Editors

R_x for "Operation Test Cell"

*Norton
CRYSTOLON*
refractory blocks
prescribed and
engineered for
terrific jet engine
punishment*

Here's what happens in the 22 test cells at Studebaker's big assembly plant for aircraft jet engines in South Bend:

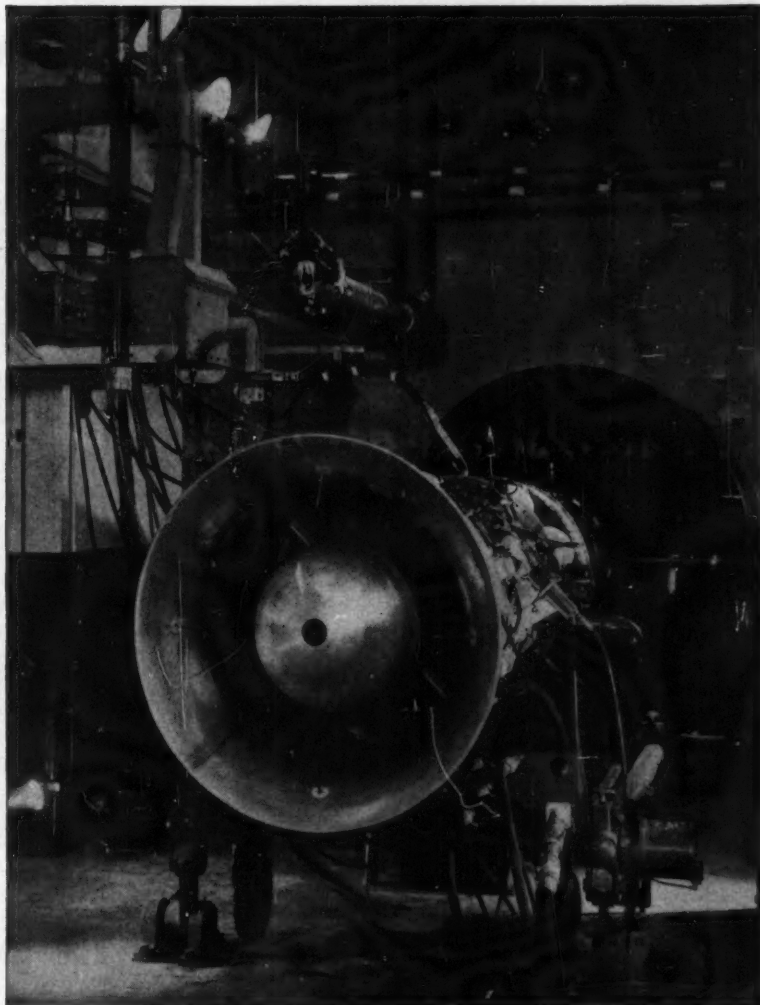
With an ear-splitting roar, the J-47 turbo-jet delivers its full 6,000-pound thrust. The velocity of the exhaust reaches 200 miles per hour, while its temperature hits 400°F in 20 seconds. Behind each engine a large venturi tube, or augmenter, directs the blast into an acoustical chamber, where a huge honeycomb muffler of hollow cement-like blocks absorbs the sound waves and heat.

In this "Operation Test Cell" the first line of defense between engine and acoustical chamber is a movable buffer of CRYSTOLON blocks. Prescribed for their great strength and resistance to abrasion and thermal shock, these Norton R_x refractories have proved themselves the best possible investment. By reducing the intensity and destructiveness of the exhaust, they have eliminated much costly repair work previously necessary in the honeycomb muffler. And after 500 hours of this tough service the CRYSTOLON blocks showed no signs of wear!

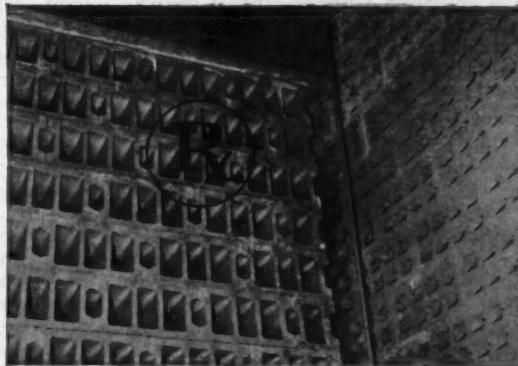
Prescribed For Your Own Applications

Investigate the many Norton R_x refractories — prescribed and engineered for individual applications — that are saving users time and money in a wide range of refractory applications. See your Norton representative, or write to NORTON COMPANY, 552 New Bond Street, Worcester 6, Mass. Canadian Representative: A. P. Green Fire Brick Co., Ltd., Toronto, Ontario.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries



▲
Ready to Roar. A J-47 turbo-jet engine hooked up for testing in the Studebaker plant. Note opening of augmenter tube at rear of test chamber.



▶
"The Shock Absorber." This movable buffer wall of CRYSTOLON blocks, directly behind the augmenter tube, protects the testing installation by dissipating the exhaust blast.

NORTON
R_x REFRACTORIES

Making better products... to make other products better

NORTON COMPANY, WORCESTER 6, MASSACHUSETTS



How Celite Mineral Fillers give a product delicate abrasiveness...



Putting a "Soft" shine in polishes

TO PRODUCE A POLISH that is scratch-free—yet contains exceptional cleaning powers—most leading manufacturers of fine polishes use one of the Celite Mineral Fillers as a standard ingredient.

This use of Celite Fillers is based on

THESE CELITE PROPERTIES BENEFIT MANY TYPES OF PRODUCTS

Because of their inertness and great bulk per unit of weight, Celite Mineral Fillers make ideal bulking agents for powders and pastes. Their tiny multi-shaped particles interlace to stiffen and strengthen admixtures. The microscopically small facets of these particles diffuse light so effectively that they can be utilized to impart any desired degree of flatness to a surface film. Their light, porous nature improves suspension, helps prevent segregation. And

their delicate non-scratching abrasive action—a property that derives from their porous, thin-walled cellular structure. It is one of many unusual physical characteristics that adapt these diatomaceous silica powders to numerous industrial uses.

their high absorption properties and unique diatom structure make them unusually effective as a means of overcoming caking in deliquescent materials.

If you are looking for the "extra something" to lift your product above competition—at a negligible cost—why not discuss your problem with a Johns-Manville Celite Engineer? For further information and samples, write Johns-Manville, Box 60, New York 16, N. Y.

CHECK LIST OF PRODUCT BENEFITS OBTAINABLE AT LITTLE COST WITH CELITE MINERAL FILLERS

- Added Bulk
- Better Suspension
- Faster Cleaning Action
- Greater Absorption
- Improved Color
- Better Dielectric Properties
- More Durable Finish
- Increased Viscosity
- Elimination of Caking
- Higher Melting Point
- Better Dry Mixing
- Improved Dispersion



Johns-Manville CELITE®

MINERAL FILLERS

BUSINESS & INDUSTRY . . .



MCA SPEAKERS*: For U.S. chemical industry, 1954 will be no time to let down.

Another Task for Atlas

If your shoulder has ever ached in sympathy at the sight of world-toting Atlas as pictured on page 1 of many an old-time school geography book, you can feel for the American chemical industry, whose burden of national responsibilities now has a topping of global obligations.

It was at last week's semi-annual meeting and winter conference of the Manufacturing Chemists' Assn. in New York's celebrity-peopled Waldorf-Astoria hotel that this industry got semi-official notice of its newest government-assigned duty: to cooperate in the Eisenhower-endorsed program for strengthening the free nations through enhanced world trade.

This was the word from both John J. McCloy, former U.S. High Commissioner in Germany, now chairman of the board of Chase National Bank, and Wayne Chatfield Taylor, Foreign Operations Administration consultant on trade, investment and monetary affairs. McCloy emphasized that the industry must take the wide-world view on current problems, plugged for more international trade. No free na-

tion can stand alone, cautioned Taylor; "we must keep our friends, or shall I say, our customers; and we must continue to find new ones."

Other Tasks Heavy: That next year will bring no diminution of the chemical industry's domestic chores was made clear to the more than 600 chemical executives in attendance by other speakers.

- To continue to fulfill their role in support of the country's defense program and civilian economy, chemical companies will have to keep up their capital investments, which will come to about 1.6 billion for 1953, according to William Foster, MCA's new, full-time president.

- To keep up with population growth in this "dynamic period," power supply and mechanical equipment must be doubled within 10 years, and the chemical industry should spend some of its research funds on study of population trends, says Lionel Edie, chairman of the board of Lionel D. Edie & Co., Inc., investment counsel and economic consultants, New York.

All Its Own: To be sure, the chemical industry still will be juggling a motley lot of problems all its own

throughout 1954; and these thoroughly complicate the work of facing up to those national and international responsibilities.

Du Pont's Fred Singer says he'll soon call a meeting of the MCA trade and tariff committee he heads, start preparing to back up the MCA tariff statement submitted to the Randall commission last month (CW, Nov. 21). Singer said help will be needed from companies and individuals in presenting substantiating data to Congress. And Allied Chemical's Richard Hansen invited support for a proposal that Congress overhaul the nation's antidumping safeguards, with transfer of administrative jurisdiction from the Treasury Dept. to the Tariff Commission.

Chemical firms should brace themselves for future dealings with the tax collector, warns Du Pont Treasurer T. C. Davis, explaining that the chemical industry—because of its relative youth—"hasn't as yet felt the full impact" of obsolescence expenses and corporate taxes. Prior to the start of federal income taxing in 1913, depreciation received little attention; now, he observes, "it's a constant scuffle with the Internal Revenue Service."

Personnel Posers: In another of the meeting's six panel discussions, talks by labor specialists revealed that chemical companies' industrial relations directors will have their work cut out for them next year. Allied Chemical's Francis O'Connell recommended steps to increase job satisfaction of "white-collar workers," including office and technical employees. Owens-Illinois' Milton Olander earnestly urged industry management to meet the rising demand for a "guaranteed annual wage" with efforts to level off peaks and valleys of production, assuring steadier work and steadier pay.

That the chemical industry has been doing a good job of carrying out its internal and domestic jobs was attested to by the guest speakers. Implicit in the speeches by chemical industry executives was a feeling that our industry would be less able to cope with its domestic problems if it's to be hobbled by inclusion in a trade-and-tariff program whose immediate effect in chemicals would be many new competitors, few new customers.

* Standing, Wyandotte Chemicals Pres. R. B. Semple, who opened meeting; seated, MCA Pres. William Foster and investment counselor Lionel Edie.



UMW's DENNY LEWIS: For District 50, a claim of top chemical membership.

Famed, Fined, Feuding

Usually, when one soldier veers away from a marching column at his own pace, the other cadets are quick to inform him that he's "out of step"; but in the case of John L. Lewis and his divergent path, the rest of the American labor movement is a bit hesitant about criticizing—possibly because of a disquieting suspicion that Lewis and his United Mine Workers might have the right cadence after all.

Lewis, the UMW and its catch-all District 50, which claims to have the biggest membership of chemical employees in the U.S., have been going their own way—particularly during the past 20 years—with a defiant steadfastness that has nettled and bewildered other labor organizations and industry and the public as well.

As the most famous and most cussed-out union leader of this generation, Lewis is an American institution, a landmark in national affairs, and a paradox personified. Although he's in the front rank among disciples of democracy, his own UMW is pretty much a one-man show. Although he's a leading proponent of labor unity, he was the prime mover in most of the big union split-ups of his day. And although he's dedicated to obtaining for his members ever higher wages, better working conditions and pension-based security that to some people smacks of socialism, Lewis is devoted heart and soul to the cause of private capitalism.

Calm in Chemicals: The career of John L. Lewis has been turbulence itself, but his District 50 has brought relatively little storm and strife into

the chemical industry. One reason: District 50's chemical locals don't join forces in concerted, industry-wide bargaining as do the UMW's coal-mining locals. Also, of course, there's the fact that District 50 represents not more than 14%—at the very most—of all chemical workers in the U.S.

Not that District 50 is altogether docile and pliant. Its local 12052 at Bridgeville, Pa., staged the major chemical strike of the year, keeping a plastics plant idle for nearly six months until a compromise settlement was reached. Wage increases at that plant then amounted to 13¢/hour over the past year.

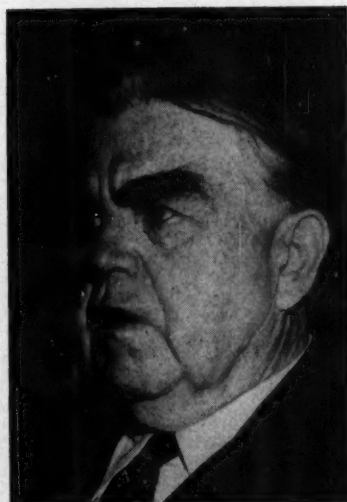
A similarly bountiful agreement was reached without a strike by local 12075 at Midland, Mich., District 50's largest chemical unit, representing about 5,700 hourly paid employees.

Criss-cross Pattern: As an illustration of how the John L. Lewis road has run sometimes with, sometimes across the route of other union leaders, let's look at the history of some local unions in the Boston area that formed the nucleus of District 50.

Those locals had been organized as federal unions within the American Federation of Labor, and had no connection with the United Mine Workers. Late in 1935, Lewis and other AFL union chiefs formed the Committee for Industrial Organization, intended as a group to coordinate mass-production industry unionization efforts within the AFL. This irked the AFL's craft-union leaders, and the Committee was asked to disband immediately. When that request was ignored, the AFL ousted the UMW and nine other unions officially supporting the Committee. Those unions then founded the Congress of Industrial Organizations, with Lewis as head man.

Thereupon, the federal unions in Boston and vicinity turned away from the AFL, asked Lewis for sanctuary, specifying that they wanted to become part of the UMW rather than a separate union in the CIO. To accommodate those locals and to provide a home for other utility and chemical locals, Lewis set up UMW District 50.

Shifting Alignments: This unit—like most unions—grew rapidly during those Wagner Act days; but more cleavages were forthcoming. Following the late President Roosevelt's third term reelection in November, 1940, Lewis and his UMW quit the CIO in a huff. Most of the chemical and utility unions stuck with UMW, but some remained under the CIO tent and eventually became the United Gas, Coke & Chemical Workers (CW, Sept.



UMW's JOHN L. LEWIS: For his union, a pugnaciously independent course.

26). Since then, District 50's top administrative officer has been A. D. (Denny) Lewis, younger brother and ardent follower of John L.

Lewis brought the UMW back into the AFL fold after World War II, but this alliance lasted less than two years. Irrate over the AFL's decision to comply with the Taft-Hartley Act, the fiery Lewis severed relations by sending this curt, blue-crayoned note to the AFL president, William Green:

**Green AFL
We disaffiliate
Lewis 12/12/47**

No Backing Down: Since then, Lewis and his 600,000-member UMW—including a claimed 100,000 chemical workers—have been staunchly independent. They are unwavering in their hostility to the Taft-Hartley law; in Lewis' own words, "I have a matutinal indisposition that emanates from the nauseous effluvia of that oppressive slave statute."

They are quick to speak out against what they consider errors on the part of other labor unions; one example is the UMW's outspoken disapproval of the "escalator wage clause" championed by the United Auto Workers (CIO).

And they are resolute in their stand against "bigness" in government. This unwillingness to bow to official dicta has cost Lewis and the UMW thousands of dollars in fines,* but their spirit of independence remains rampant. Still, no one impugns their patri-

* In 1946, Lewis was fined \$10,000, the UMW \$700,000, for contempt of court; in 1948, they were fined \$20,000 and \$1.4 million, respectively, on charges of criminal contempt of court.

otism; Lewis' position is that all groups should "work together collectively to uphold America." The UMW constitution forbids membership to Communists, Fascists, Ku Klux Klanners or members of the Chamber of Commerce of the U. S.

They Walk Alone: Taking its cue from Lewis and the rest of UMW, District 50 haughtily disdains to have anything to do with the National Labor Relations Board. It will take part in plant elections conducted by other agencies, but in an NLRB balloting, supporters of District 50 vote for "no union." If the "no union" tally is largest, NLRB and rival unions retire from the scene, leaving District 50 alone to deal with the employer. Any reluctance on the employer's part to recognize District 50 as the workers' bargaining agent may lead to a strike. District 50 has lost out at some chemical plants by these tactics, but by and large it has continued to gain ground since T-H enactment.

Gas-Coke leaders have said that one reason they clung to the CIO when Lewis exited with the UMW was that District 50 wasn't sufficiently "democratic" for them. That charge is stoutly denied by Denny Lewis; he insists that his union is even more democratic than either the CIO or AFL chemical union. His reasoning is that so long as each local has latitude in running its own affairs, individual members don't have to worry about District 50. Not only is there no convention for District 50, but District 50 locals don't even send delegates to the UMW's biennial conventions. District 50 employs 63 regional directors, including one in Canada, and some 400 field representatives, all of whom are appointed from District 50 headquarters in Washington. Individual members vote only on local offices.

Rival union officials dispute District 50's membership claims, contend that of Denny Lewis' approximately 200,000 members (including the United Construction Workers, now consolidated), not more than 50,000 are chemical workers. But, while UMW doesn't make public its financial and membership record, it's safe to say that the latter figure is too low. (A spot check by CW last year showed that District 50 had nearly 18,000 chemical workers under just 10 of its numerous contracts.) And with its "sales appeal" hitched to John L. Lewis' showmanship and his prestige among workers ("look at all the benefits he got for the coal miners"), District 50 can be expected to keep on building up its chemical industry membership.

Not Big Worries Now

With three weeks to go 'til Christmas, chemical executives the country over say their biggest head-splitter today is selling. Concern over whether excess profits taxes will really expire has virtually disappeared; there's a general slackening in belligerency over tariffs; manpower's freer now; profits are holding firm.

General consensus among industry leaders polled in CW's survey last week is that problems aren't any different now than they were six months ago—just closer. Asserts one corporate vice-president: "There's a big black curtain between 1953 and 1954; nobody's worried, but everybody's alert." Says another: "It looks like we're in for some cases of overproduction in the months ahead—but I don't expect anything drastic or long-lasting."

Concern over union outbreaks, possible recession, cutbacks in government contracts has gradually slipped into the background (CW, Apr. 18). Nobody's lying awake nights bothering about pollution ("we regard it as a community relations problem . . . keep on top of it to avoid crack-downs"; or "everybody in the chemical industry today sees the wisdom of locking the door first . . ."); pressure from stockholders is practically nil.

There's a general feeling that "now's the time to get down to brass tacks—the wraps are off now, and we're settling down to normal again." Plenty of brain cells are being exercised though, with attention focused especially on:

Increasing sales

right down the line. "We have a saying around here," asserts one company president, "that most of our problems would vanish if sales picked up." Everybody's looking for stiffer competition, "and it's due to accelerate next year." Cutting prices, the majority agree, isn't the answer; "the only sound way to increase sales is to displace other materials."

Expansion in '53 has "already put the bee on sales. Prices are up some," volunteers a company sales manager, "but costs are up more . . . so we're operating on a narrower margin. There's nothing to do but sell more . . ."

From those who've cut prices: "we're really putting the heat on sales now. Everybody has a surplus in agricultural chemicals . . . and you have to cut to stay within marketing range."

"We've doubled our sales force

(and also our promotion over the past two years) offers one pharmaceutical maker. Expansion's the spur . . . it's put a big push on sales." Vouches another: "Our customers just aren't buying because they're uncertain about 1954. Prices aren't tumbling . . . and I don't think they will . . . but as a result of the squeeze, you're going to see some mighty slick sales campaigns popping up soon."

Excess Profits Taxes.

generally conceded as heaving its last gasp, isn't a major worry now, just a concern. Typical executive reactions: "Our future expansion's riding on its demise"; or "we're counting on the money gained to allay rising costs, help pay for development."

Those most seriously concerned (companies just beginning to grow in the 1942-49 period) are literally prancing at the gate. "With the death of excess profits taxes, our greatest headache evaporates. Everything in our company is hanging on the elimination."

Others are less exuberant: "Lots of us aren't heavily enough in excess profits tax brackets to worry about scooping up the gravy"; or "it doesn't affect us one way or the other any more. Our expansion's all over for the time being."

Tariff Regulations

are a continuing sleep-sapper. Manufacturing Chemists' Assn.'s recent policy statement, gets a thumping "well-done" from many sources; numerous executives admit they're "proud and pleasantly surprised at the accord," because of the "small chance you have in the chemical industry to get a united front for lobbying purposes since so many situations exist."

The trend today seems to be "toward some form of sensible tariff reductions"; the temptation, as many executives openly state, "is to want to see the other fellow's tariffs lowered . . . not our own." Production-by-product consideration is widely endorsed by some; others favor working at the problem from the "national policy" angle. One Midwest chemical executive would compromise: "Foreign firms producing in low-cost areas (with cheap labor, few social benefits) shouldn't be allowed to compete with us. If they'd pay decent wages, get their costs up, we'd welcome competition on an equal footing."

A particular few (such as the pro-

ducers of polyvinylchloride) are currently champing over imports of their product. "They're underpriced in comparison with domestic grades; in some cases they're lower in quality." Others are forthrightly bitter: "When you get strong industry groups leaning toward freer tariffs, it's bound to go that way. There's little you can do but pull out."

Technical Manpower

isn't strapping anybody particularly, except in the pulp and paper industry, where scientific and engineering personnel are still scarce. "Expansion's always bound to make it a headache," voices one California executive vice-president. "It causes transfers, promotions, and shortages; we haven't really caught up with the last round yet." Production men, it seems are much easier to get now; researchers and especially salesmen are still scarce. A few still blame the draft for much of their manpower problem; most concede "the situation's easing some—especially at lower levels."

Inventories

are a growing source of concern, offer the greatest variety of response in CW's analysis. A few executives claim "they're running at just about last year's"; others worriedly say they're running higher "but we're sure it's only a temporary situation." Most numerous and most openly harrassed are those executives who agree that "we're drastically reducing inventories right now, just as our customers are reducing them"; or "our warehouses are being kept at a working minimum now; it's being done by all our competitors, too."

Fourth-Quarter Profits

over-all, company leaders concur, should average just about the same as fourth quarter 1952. "They're really up . . . as a per cent of sales," one treasurer says, "but they won't show as a per cent of capital employed, because of the heavy expansion in the chemical industry this year." Year-end profits should be up an average 10-15%; practically everyone's expecting a healthy first quarter in 1954. Prices, if most executives are good prognosticators, should stay about the same.

Reducing Costs

is the subject of much night-oil burning throughout the country, executives say. "The best approach for increasing production rates at the cheapest cost is to improve your processes to get better yields." At all levels of manage-

ment the hunt's on today; "more time's spent on that one worry alone in our company than on all the other headaches thrown together."

In general, CW finds, most executives think expansion programs are leveling off now . . . but they're not worrying much about it. "I breathed a big sigh of relief," says one, "when I found that next year's a year of assimilation for us."

Some others are still gnawing over the possibility of overexpansion, caused, they say, "by the entry of new and uninformed competition."

Price-cutting, especially in the resale of chemicals, is a spotty fretter at best. Those most closely concerned say they're perturbed "about the farmer's economic situation . . . but not actually losing sleep over it."

Over-all it looks like a worry-weightless Christmas all around. Says one company president thankfully: "to be honest about it, my biggest headache is slapping down the perennial crapehangers who seem bound and determined to hang a wreath over our door. Sure, business is off a little, but in general the picture's mighty bright."

COMPANIES . . .

Reynolds Metals Co. is putting up the cash for dike work near its Troutdale, Ore., aluminum reduction mill on the Columbia River. Agreement was reached with Portland District Engineers on plans for the work after Congressional disposition of civil works funds left little doubt that any dike work funds will be voted in 1954 for the project. Reynolds officials say they'd rather contribute a substantial sum now to save homes and farms in the area from possible flood damage (such as occurred in 1948), than have to wage another costly fight merely to save its own plant in the event of disaster. Cost to Reynolds has not been disclosed.

National Aniline Div., Allied Chemical, has started mass destruction of 37 unoccupied homes it owns on its Buffalo, N.Y., property. No expansion plans in the immediate future are contemplated.

Continental Sulphur & Phosphate Corp. has let a contract for construction of a 50-ton sulfur plant at Thermopolis, Wyo. Completion is expected within 6-8 months. The unit will use (under license) American Sulphur & Refining Co.'s new solvent extraction process, designed to turn out 99.6% refined powdered sulfur.

First National Petroleum Corp. will buy "for something less than \$250,000" Utah Cooperative Assn.'s Jansen, Utah, refinery. First National's immediate plans include doubling of present capacity (to 3,000 bbl./day), adding a \$1.25-million cracking unit.

Latest certificates of necessity:

Reef Gasoline Corp., East Vealmoor Field, Tex., specialized isobutane facilities \$280,705 at 100% and \$14,125 at 65%.

Bethlehem Steel Co., Lackawanna, N.Y., metallurgical coke facilities \$1,490,000 at 25%.

Plastics Engineering Co., Sheboygan, Wis., plastic molding compounds \$451,793 at 45%.

Mathieson Chemical Corp., Baltimore, Md. will acquire all the outstanding stock in Puritan Co., Inc., and its wholly owned subsidiary, Genessee Research Corp. Stock in the Rochester manufacturer of soap, automobile specialties and organics will be traded Jan. 6 for Mathieson stock on an undisclosed exchange ratio.

EXPANSION . . .

Phosphates: Armour & Co. has started work on a \$7-million plant in Bartow, Fla., that's due to put it back in the phosphate mining industry. Production's slated to start in 18-24 months; first unit in is to be a five-story phosphate washer and flotation plant.

Sulfur: Sulfur has started flowing from Freeport Sulphur's Garden Island Bay mine at the mouth of the Mississippi (CW, June 27). At peak operation, output of 500,000 long tons/year of sulfur is anticipated. Total cost: \$14 million.

Pharmaceuticals: Armour's Kankakee Laboratories will formally open a \$12-million plant to produce ACTH, trypsin, insulin and other pharmaceuticals. Part of the plant's facilities are already slated to produce blood fractions—gamma globulin, and human serum albumin.

Coke: Somet-Solvay Div., Allied Chemical, has completed work on a new battery of coke ovens, including coal handling and by-product facilities at its Ashland, Ky., plant. By-products include: coal tar extract, ammonia, crude benzol and carbolic oils. The system is capable of handling 350 tons/hour of coal, will turn out in the same time 2,800 gal. coal tar; 1,050 gal. crude benzol; 2,100 lbs. ammonia.



Dust Respirators

**GOOD,
LIGHTWEIGHT,
COMFORTABLE**

In the
"Good Old Summer Time"

A comfortable worker is a better worker! That's why these lightweight (1½ ounce) respirators are particularly welcome when temperatures soar. They do a real protective job and they're economically priced. Your nearest AO Safety Products Representative can supply you. Model numbers are R9100 and R9100T.

Recommended Uses

R9100 Respirator provides protection against pneumoconiosis-producing and nuisance dusts such as borax, carbon, glass, grain, graphite, cement, limestone, gypsum, coke, charcoal, wood, pollen, flour and aluminum.

R9100T Respirator, similar in appearance and construction to the R9100, protects against any toxic dusts not considerably more toxic than lead — such as arsenate of lead, barium, cadmium, and manganese. It also protects against DDT.

Both respirators are approved by the U. S. Bureau of Mines (R9100 — BM2137; R9100T — BM2144).

Look to AO for a complete line of safety goggles, protective clothing and respirators for every industrial need.

QUICK FACTS

Construction: Simple design includes a smooth, rubber face-contacting mask and a corrugated permanent type felt filter, reinforced by a wire frame.

Filter: Corrugated facepiece forms filter, giving large filter area of approximately 22 square inches.

Breathing comfort: Easy to breathe in — non-reversing, low-resistance exhalation valve does not stick, is out of way and easily replaceable.

Wearing comfort: In addition to light weight, comfort features include soft rubber, smooth edges and self-adjusting double headband.

Unobstructed visibility: Compact, fits close to face. May be worn under helmet or with goggles.

Easily cleaned: A vigorous shake, a slap of the hand or a light blast from an air hose removes dust.

American Optical



SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

Executive Turnover: Growing Headache

It's no secret to harried executives in the chemical industry that 1953 has been a banner year for management turnover. No level of responsibility has been immune to the trend, no particular sector of the industry more or less secure from the perils of company hedgehopping.

The problem has reached such proportions that in many instances top priority today is given by executive committees to the single task of keeping management men "on the team."

Tackling the reason behind the general restlessness, CW last week polled a representative cross-section of those who should know best. Its single question to job-switchers: What all-important reason occasioned your recent change of company affiliations?

Timing—the Trigger: Response was at once candid and revealing. It would seem to indicate that while there are almost as many individual reasons as there are names for job-hopping, one basic consideration underlies them all. With expansion at an all-time peak, most executives think it's now or never. Top-drawer talent is in demand—particularly in sales is the bidding high for experienced hands. "There's no telling," admits one company division head, "how long executives will be in short supply. Like everything else, time catches up on demand . . . and it probably won't be long now until there'll be plenty of good men to go around." Others echo his words: "The present state of affairs is just a symptomatic growing pain." Or, "I weighed all the pros and cons . . . decided that if I was ever going to make the break there was no time better than the present."

But while timing is often the trigger, a wide variety (and combination) of reasons propels job-switching at top levels in the chemical industry today. Of all the factors involved, not one

"If you really contemplate getting ahead in the chemical industry today, you need all the experience you can get. Top-management job openings are looking for a fellow who knows all ends of the business."

was mentioned as the sole reason by more than 12.5% of those polled; yet all but three of the questionees included one of the big five causes "as part of the picture."

In order of frequency of mention:

- Desire to gain more—and wider—experience takes top billing as the principle cause for changing jobs.

From every corner of the industry response indicates that "to get anywhere today, you have to have first-hand knowledge of every phase of the business." Large corporations, in particular, are apparently guilty of "too much channeling of duties." And though the odds are against it, executives (especially at lower management echelons) are determined to "take a crack at as many phases of operations as I can" . . . on the chance that "wide knowledge pays off in the long run."

"Our educational system today," laments one development executive, "is geared all wrong." What we need as potential executives is not the specialist, but the fellow who's had his fingers in every end of the work . . . from production to sales. "But the small company can't afford to train its young men that way . . . and the big corporation is much too departmentalized." Executives have taken matters into their own hands. To get the kind of training they see makes for "top sales appeal," they feel compelled to move about from company to company.

- Lack of "job responsibility" en-

"Job responsibility was my main reason for moving. Large corporations are so regimented today . . . that unless you're way up in management circles, you don't get any satisfaction . . . can't see a job through."

tered into many other decisions. "I felt out of the race," admits one recent changer. "We were so big . . . and the job in comparison was so small. It wasn't a matter of what I did—it was just that I never had a chance to work from start to finish on anything." Says another: "Basically I guess it was the old story of the little fish in the big pond; . . . the change reversed everything."

- A number of reasons for job-changing at an executive level boiled down to a third factor "that's developed," according to one observer, "as the industry has expanded." Rapid growth, says he, "is very apt to mean that for a while all management in a company hovers around one age bracket." But as the pyramid shapes, less and less room is open at the top. "What's more natural than for many of those who can't see room ahead to jump at the chance of advancement elsewhere?"

- Cold cash as a lure to executive

hedgehopping placed next in order of

"As far as I could see, the ladder up ahead was well filled. In a relatively young company . . . that's always the problem you face unless you get in at the start."

importance in CW's survey. "Actually I was very happy in my old position," concedes one treasurer. "My associates were of the best—I'd really had no thought of moving on. But this offer was just too good to turn down."

- Outlook for the particular sector of the industry concerned was a moving factor in the decision of others. Offers one: "Developments are moving

"I'd thought about a change of scenes for a couple of years . . . but financially the move wasn't worth it 'til now."

so quickly today in the chemical industry that unless you're with the front line, you're really not getting anywhere. Competition is getting rougher all the time.

Scattered at Random: A host of other reasons entered into the decision of many. Among them: Policy disagreements; long-term growth potential of the company; natural disinclination for the job in hand; out-and-out desire for a change.

As long as such divergencies exist, there's no easy answer for solving the problems of executive turnover. The best that top management can hope to do to keep key personnel happy is

"It's the old story of the grass looking greener on the other side of the fence. The end of the chemical industry I was in looked pretty settled; here we're just starting . . . there's a long way to go."

to try to eliminate unnecessary friction points, attempt to offer a healthy company future.

Development programs, according to many, are a step in the right direction. Well-working, they do much to confront the "too narrow experience" plaint. "Flexible organization" helps, too; and a well-tuned compensation program, designed to meet the individual needs of executives in all capacities, can easily spell the difference between heavy and only reasonable executive turnover.

National Aniline Reduces Resin Chemical Prices

National Aniline Division, Allied Chemical & Dye Corporation, New York, has reduced prices on Maleic Anhydride and Fumaric Acid from 32¢ per pound to 27¢ per pound, carload lots. National Aniline is now the world's largest producer of these two important resin and surface-coatings chemicals. Its new, lower prices reflect production economies resulting from expanded facilities, process improvements and increased output. These price reductions should contribute importantly to the wider use of polyester resins and other resinous products in which Maleic Anhydride and Fumaric Acid can now be used economically in ever increasing volume.

Re-check "Costs vs. End-Product Values" with lower-priced

NATIONAL MALEIC ANHYDRIDE or NATIONAL FUMARIC ACID

With new, low prices offered by National Aniline, you may now be able to re-formulate your resinous compounds, improve end-product characteristics and widen your markets . . . without reducing your profit-margins. It's well worth trying, now.

MALEIC ANHYDRIDE
PHTHALIC ANHYDRIDE
TETRAHYDRO PHTHALIC ACID
HEXAHYDRO PHTHALIC ANHYDRIDE
MONOCHLOR MALEIC ANHYDRIDE
SUCCINIC ANHYDRIDE
FUMARIC ACID
MALIC ACID
SUCCINIC ACID
SUCCINIC ACID ANHYDRIDE

National Aniline concentrates on producing more, better and lower-priced Maleic Anhydride, Fumaric Acid and other basic resin ingredients for sale to manufacturers of resinous compounds, moldings and surface coatings. We welcome inquiries for technical data and samples that may develop wider use of the chemicals listed at the left.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

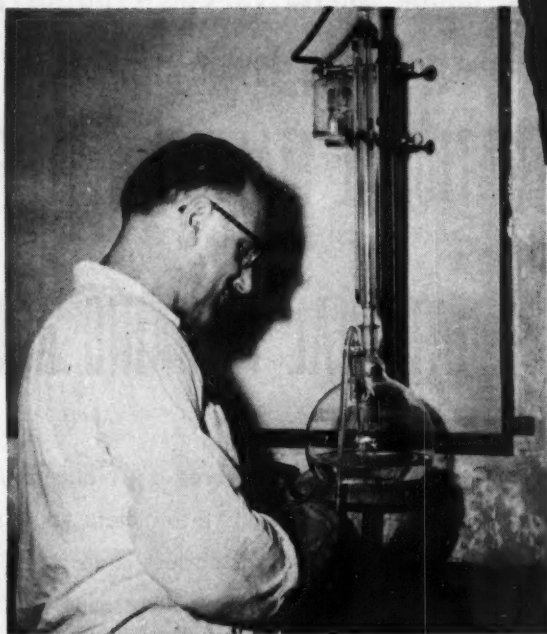
40 RECTOR STREET, NEW YORK 6, N.Y. • Bowling Green 9-2340

Boston 14, Mass., 150 Courtenay St.	Capital 7-0490	Richmond 19, Va., 8 North Fifth St.	Richmond 2-1920
Providence 3, R.I., 15 Westminster St.	Dexter 1-3008	Columbus, Ga., Columbus Interstate Bldg.	Columbus 3-1029
Philadelphia 4, Pa., 200-204 S. Front St.	Longford 3-4382	Greensboro, N.C., Jefferson Standard Bldg.	Greensboro 3-2518
San Francisco 5, Cal., 517 Howard St.	Sutter 1-7507	Chattanooga 2, Tenn., James Building	Chattanooga 4-4347
Portland 9, Ore., 730 West Burnside St.	Beverly 1853	Atlanta, Ga., 1214 Spring St., N. W.	Elgin 0208
Chicago 54, Ill., The Merchandise Mart	Silverstar 7-3187	New Orleans 12, La., Carondelet Building	Raymond 7228
Charlotte 1 N.C., 201-203 West First St.	Charlotte 3-9221	Toronto 2, Canada, 137-143 Wellington St. W.	Empire 4-6495



Sonneborn Scrapbook-1937

THE MINERAL



Sonneborn Develops First Test to Predetermine Stability of White Oils

New York, N. Y., 1937. L. Sonneborn Sons, Inc. has recently developed the first reproducible, accelerated method of determining the shelf life of white oils. Long needed in the industry, this test foretells how long white oils may be stored before changes in odor, taste and color can be expected.

Achieved by
Sonneborn
RESEARCH
1903 • 1953



For over half a century, industry of every kind, large and small, has taken advantage of Sonneborn's research and specialization in white mineral oils and petrolatums. More important for you, Sonneborn has the versatility to adapt its experience to the individual requirements and special problems of practically any industry. May we put these unique resources, this highly skilled ingenuity to work for you?

L. SONNEBORN SONS, Inc., NEW YORK 10, N. Y.

B & I

Smog and Smaze

Whether it's smog or smaze or just plain offensive odors from sewage in streams, representatives of the Manufacturing Chemists' Assn. and the Southern Assn. of Science and Industry, Inc., will meet next Apr. 21-23 at the Hotel Shamrock, Houston, Tex., in an attempt to cope with the situation. L. L. Hedgepeth, of American Cyanamid, conference chairman, says the program will cover both air and stream pollution problems, including managerial as well as technical aspects.

Elsewhere, aroused citizens this week were continuing the pollution battle. To counter smoke and clear the air:

- Residents in and around Los Angeles are incorporating the recently formed Southern California Air Pollution Foundation, a nonprofit group of leading citizens aiding in smog research.

- The Massachusetts State Public Health Dept. is nominated to conduct a study of ways to eliminate offensive odors, fumes and gases from industrial activities under terms of a bill filed for consideration by the 1954 state legislature.

- W. A. Quebedeaux, Jr., of Champion Paper and Fiber Co., has been appointed director of the Harris County Stream and Air Pollution Authority. His first job will be to stop air pollution from four packing houses in the University of Houston area.

Highlighting the countrywide stream pollution roundup:

- The Virginia State Water Control Board reported that the "long grind" of cleaning up the Roanoke River was coming to a close. All pollution discharges in the Roanoke-Salem area are now classed by the board as minor.

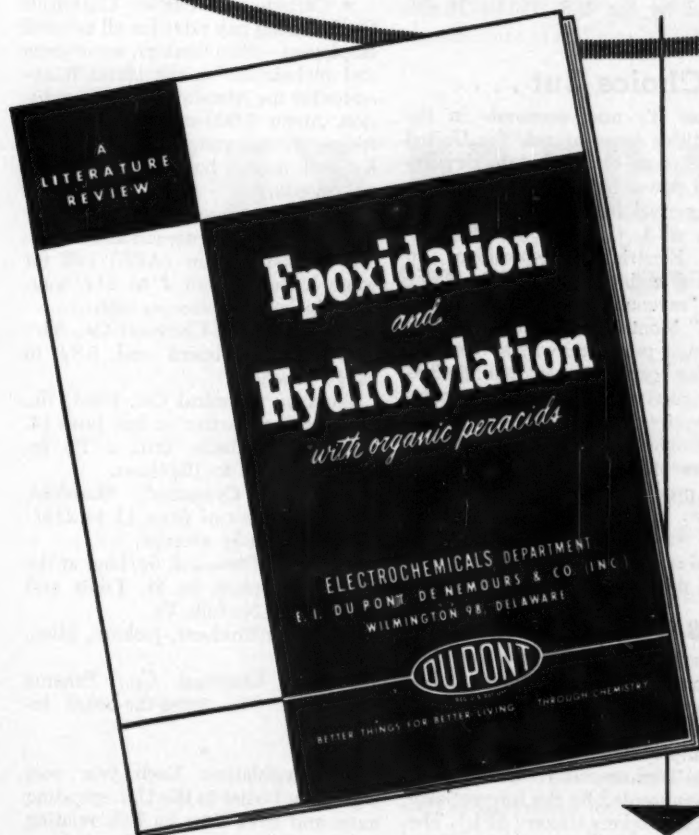
- Connecticut's State Water Commission is moving ahead with sewage treatment programs in 11 municipalities.

- Five oil refineries in the Walnut Valley have been ordered by the Kansas State Board of Health to have water pollution abatement plans and specifications ready and a construction program outlined by Jan. 1, '55. All water pollution control facilities must be completed by July 1, '57.

- In Bloomington, Ind., city fathers are ready to call in someone to help them locate the source of a powerful detergent that is being dumped periodically into the sewer system, fouling up operation of the sewage disposal plant. Seems no one will admit to killing the bacteria in the disposal plant's digestors.

Here's valuable information for you on EPOXIDATION and HYDROXYLATION

Recent developments are reviewed
in this New Du Pont booklet



HERE is an up-to-date, authoritative summary report on the progress that's been made in the promising new field of epoxidation and hydroxylation. This Du Pont booklet brings you the latest information on what others have done and documents each fact with the most complete bibliography available on the subject.

You'll read how epoxides are formed—how hydrogen peroxide goes into the preparation of the peracids required for reaction to the finished product. And you'll be particularly interested in the many applications already found for epoxides and glycols. These include use as plasticizers and stabilizers . . . as constituents of paint, varnish and synthetic drying compositions . . . and as intermediates in the production of epoxide resins, lubricants, surface active products, detergents and many others.

This new booklet is sure to be of value to you, particularly if you're working with vegetable oils and animal fats. It's offered for your information and as a guide in your development work by Du Pont—manufacturer of "Albone" hydrogen peroxide.

DU PONT
ALBONE®
HYDROGEN PEROXIDE



Better Things for Better Living
... through Chemistry

MAIL THIS COUPON FOR YOUR COPY

E. I. du Pont de Nemours & Co. (Inc.) CW-125
Electrochemicals Department, Wilmington 98, Delaware
Please send me a copy of your new booklet on epoxidation and hydroxylation. I am interested in _____

Name _____

Position _____ Firm _____

Address _____

City _____ State _____

DCAT Prescription

With an eye toward next year's legislative sessions, the executive committee of the Drug, Chemical and Allied Trades Section (DCAT) of the New York Board of Trade, Inc. has adopted the "model antisubstitution bill" (CW Oct. 24) recommended by a special committee headed by G. S. McMillan of Bristol-Myers Co.

For years, DCAT has been concerned with the problem of drug substitution, a practice indulged in by a small segment of retail pharmacists. It's felt that this model bill represents a practical solution to this problem as it can be used when and where needed. With most legislators not familiar with the technical problems in drug substitution, this bill, which covers the salient points, can be used as a basis for legislation and changed to fit in with pharmacy laws of the various states.

DCAT is careful to emphasize that drug substitution is no problem when prescriptions are placed with a reputable pharmacy. Most large drug firms have already taken a firm antisubstitution stand with their employees; it's the small drug store with limited stocks that engages in brand-changing.

The model bill, drafted by a subcommittee of lawyers from leading firms in the industry after months of study, prohibits "substituting a different drug, brand of drug, or drug product of a different manufacturer or distributor for any drug, brand of drug or drug product ordered by a prescription or otherwise." Possible penalties under the model law: money penalty not to exceed \$500 plus costs, suspension of license.

Biological Law

"Let's put regulation of biologicals for veterinary use on the same basis as those for humans." In a nutshell, that's what the producers of drugs for animal diseases were hoping for this week, after their recent meeting to discuss revision of regulations and procedures of the U.S. Dept. of Agriculture's Bureau of Animal Industry.

Everyone agrees there is need for review. As yet it's too early to say how extensive it will be, or who will conduct it.

Agriculture officials indicated that they might ask industry groups to aid in the evaluation. Legal aids of USDA are checking to see whether they can set up formal industry advisory committees for the department under its present regulations. If they can, well

and good. If they can't, USDA may either set them up informally, or ask Congress for specific authorization.

Undersecretary of Agriculture True Morse thinks the principle is good, says it reflects President Eisenhower's aim to get private citizens and government to work together.

Present control of human and veterinary biologicals got its start from laws passed in 1906 and 1913. But manufacturers say the regulatory framework built up since that time by BAI is a good deal more restrictive than that for human biologicals developed by the U.S. Public Health Service.

No Choice But . . .

Whether it's now economic in the competitive sense or not, the United States has no choice but to develop electric power from atomic energy on a commercial basis. This is the contention of A. C. Monteith, Westinghouse Electric's vice-president in charge of engineering. With the whole world "ravenous for more and more power," Monteith says, atomic power is the most promising way to close the widening gap between our limited energy reserves and our growing energy requirements.

Westinghouse gave further emphasis to these statements this week with power predictions for 1964: 132 million kw. in steam power, 32 million kw. in water power, 4 million kw. in internal combustion engines, and "perhaps 2 million kw. in atomic power."

LABOR

Laurels Divided: Among latest elections conducted by National Labor Relations Board at chemical plants and chemical process works:

- Employees at Dow's new styrene plant in Torrance, Calif., have chosen to be represented by the International Chemical Workers Union (AFL). The union says all employees are signed up.

- With all but eight employees taking part in the election, the Oil Workers International Union (CIO) won bargaining rights at the Nyotex Chemicals plant in Houston, Tex. Voting was 75 for OWIU, 46 for ICWU.

- Strengthening its hand in the plastic products field, the United Rubber Workers (CIO) took a 107-to-1 victory in an election at Kentile, Inc., South Plainfield, N.J.

- Employees of Koppers Co.'s recently opened chemical plant near Port Arthur, Tex., have voted in favor of representation by the International Chemical Workers Union (AFL). There were 23 ballots for ICWU, nine

against, and one challenged. The Koppers group will be ICWU's first local in the Port Arthur vicinity.

• **Autumn Gold:** Late fall has brought contract renewals and substantial wage increases to thousands of chemical workers:

- B. F. Goodrich Chemical Co. is upping wage rates by 10¢/hour for employees at Bells Lane, near Louisville, Ky., who are represented by Distillery Workers Union (AFL). Base pay rates now range from \$1.63 to \$2.22/hour, with a \$2.04 average.

- Carbide and Carbon Chemicals Co. is raising pay rates for all salaried employees—office workers, supervisors and technicians—at the plants it operates for the Atomic Energy Commission. About 5,500 employees at Oak Ridge, Tenn., and 700 at Paducah, Ky., will receive boosts ranging up to \$20/month.

- New contracts negotiated by various locals of International Chemical Workers Union (AFL) call for wage hikes of from 4 to 21¢/hour. They include agreements with:

- Buffalo Electro-Chemical Co., 8¢/hour across-the-board and 3.3¢ in fringe benefits.

- Blockson Chemical Co., Joliet, Ill., 10¢/hour retroactive to last June 14.

- Barium Products, Ltd., a 7% increase worth 8 to 10¢/hour.

- American Cyanamid, Stamford, Conn., increases of from 11 to 21¢/hour for a 14.5¢ average.

- Monsanto Chemical, 5¢/hour at the Carondelet plant in St. Louis and 10¢/hour at Norfolk, Va.

- Linde Air Products, Jackson, Miss., 7¢/hour.

- Arizona Chemical Co., Panama City, Fla., 3% across-the-board increases.

Labor Legislation: Each year sees legislative bodies in the U.S. spending more and more time on bills relating to labor. Latest straws in the wind:

- Washington observers now foresee little or no change in the Taft-Hartley law during 1954. Some of Eisenhower's advisers are urging him to ask Congress to alter the law, as his campaign speeches indicated he'd do; but certain key Republican congressmen want a hands-off policy on T-H. Their view: only union officials, not rank-and-file members, care about changing the law; and to move in that direction would alienate business and consumer groups.

- Another hot labor potato for the GOP next year will be the 75¢/hour minimum wage and the 40-hour week. There's pressure to boost the minimum

when free chlorine is costly

Free chlorine in a liquid or gas stream is anything but *free* if you have to figure in the cost of removing it.

And oftentimes process efficiency or product specifications may require its removal. One example is in the manufacture of CP muriatic acid.

use **HYDRAZINE** to remove it

In this process, the use of hydrazine to remove free chlorine offers both convenience and economy over conventional methods involving additional scrubbing or the use of antichlors. Hydrazine, when added to hydrochloric acid as hydrazine hydrate, combines with the free chlorine to form hydrochloric acid and nitrogen. The reaction can be accomplished in the finished product storage tank or tank car with the addition of hydrazine hydrate in approximately stoichiometric proportions to the amount of free chlorine present.

The practicality of the use of hydrazine to remove free chlorine from HCl suggests its application in the purification of aqueous solutions of other halogen acids as well as anhydrous forms of these acids and other liquids and gases. Further information and samples are available . . . please write on your company letterhead.



MATHIESON CHEMICAL CORPORATION

Mathieson Hydrocarbon Chemicals Division

Baltimore 3, Maryland

ETHYLENE GLYCOL • DIETHYLENE GLYCOL • TRIETHYLENE GLYCOL • ETHYLENE OXIDE • CHLOROBENZENES • METHANOL
ETHYLENE DICHLORIDE • SODIUM METHYLATE • HYDRAZINE PRODUCTS • ETHYLENE DIAMINE • DICHLOROETHYLETHER

FROM
THE
BLAW KNOX
COMPANY

FIST FULL OF FACTS ABOUT OKLAHOMA



Before you make plans to locate new chemical processing plants, read the results of what Oklahoma offers you. An intensive survey is available now. You'll be able to review actual statistics compiled by experts from the Blaw Knox Company, Chemical Plants Division.

Here is a comprehensive analysis of Oklahoma raw materials such as natural gas, refinery gases, liquefied petroleum gases, salt and oil field brine; limestone, available chemical products, vegetable oil materials, coal for coke and silica sand. Also, possible plant sites and markets relating to petrochemicals, resins, plastics, synthetics and chemical industry products of all kinds.

OKLAHOMA
PLANNING AND RESOURCES BOARD

Write - Czar Langston, Director
State Capitol Bldg.
Oklahoma City, Okla.

Detailed information on Oklahoma's resources, as they pertain to your specific industry, is now available from the Blaw Knox survey. Write today.



B & I

wage, and there's also pressure to extend the wage-and-hour law's coverage to include more shops, more workers.

- Arguing that "the greatest factor for safety would be high rates" on workmen's compensation insurance, the CIO in Massachusetts is pulling for substantial increases in benefits provided by the workmen's compensation law in that state. The AFL is asking for a clause to prevent discrimination against injured workers being considered for re-employment.

- A special research committee named last year by Governor Fine is recommending complete revision of Pennsylvania's labor arbitration laws. The state's 1927 arbitration law, the committee points out, was designed primarily for commercial disputes rather than for labor controversies.

Union Shop Tiff: Holding out for a union shop clause, more than 1,000 production workers in Sharp & Dohme plants at Philadelphia, West Point, Pa., and Glenolden, Pa., are staging the first strike in nine years of bargaining between Sharp & Dohme and the United Gas, Coke & Chemical Workers (CIO). The company is offering an 8¢/hour wage increase and double time for work on holidays.

Says company President William Dempsey: "We will continue to work actively to maintain sound relations with the union. . . . But we do not believe the company should use its power of discharge to force employees to join the union against their will."

Gift Horse's Mouth: Apparently seeing nothing wrong about looking at a gift horse in the mouth, the Oil Workers International Union (CIO) is opposing a Richfield Oil Corp. plan for purchase of stock by employees. OWIU got the regional office of the National Labor Relations Board to issue an "unfair labor practice" complaint on the ground that Richfield installed the plan without first bargaining with the union.

There's a "distinct difference," a company spokesman asserts, between the company's voluntary offer to help employees buy stock and the union's position that it has the right to bargain over stock acquisitions by employees.

What To Do: A new guidebook on labor relations for small- and medium-size companies is Black and Piccoli's "Successful Labor Relations for Small Business," McGraw-Hill, 1953, 370 pp. It's made up of advice on what to do when confronted with such labor problems as personnel policy, strikes,

When a high flash-point solvent
makes the difference in your product



Celanese*

NORMAL PROPYL ALCOHOL

**RED LABEL
FLASH POINT**

CELANESE NORMAL PROPYL ALCOHOL SPECIFICATIONS

Spec. Grav. @ 20/4°C... 0.806

Distillation Range 2°C. max.
(incl. 97.15°C.)

Color (APHA max.)..... 5

Solubility in 85% H₂SO₄... Complete

Solubility in Water..... Complete

Water Content, max. 0.2% by wt.

Non-volatile Material ... 0.001 gms.
(max.) /100 ml
Sample

Acidity and Alkalinity ... Neither acid
to methyl orange
nor alkaline to
phenolphthalein

NORMAL
PROPYL
ALCOHOL

ETHANOL
ISOPROPANOL
METHANOL

protective floor coatings ingredient—emulsifying agent in insecticides—chemical synthesis—solvent for polystyrene coatings—latent nitrocellulose solvent—same evaporation rate as n-butyl acetate

Plant safety measures and special storage requirements handicap many protective floor coatings. That's why manufacturers are turning to Celanese Normal Propyl Alcohol. With solvent properties equivalent to ethanol, methanol and iso-propanol, Normal Propyl Alcohol has a higher, safer flash point of 96°F.† This can be an important factor in keeping the flash point of your product above regulations of the Bureau of Explosives for Red Label designation.

Celanese Technical Service and Application Laboratories will be glad to assist you in your evaluation of Normal Propyl Alcohol. Solvent "specialists" can help you reformulate, make complete field tests and cost analyses. Write for working sample, prices and data.

† as reported in laboratory tests by Bureau of Explosives, Association of American Railroads. Normal propyl alcohol is not classed as a flammable liquid under I.C.C. regulations.



*Reg. U. S. Pat. Off.

CELANESE CORPORATION OF AMERICA • CHEMICAL DIVISION • 180 MADISON AVENUE, NEW YORK 16, N. Y.

December 5, 1953 • Chemical Week

BERKSHIRE



BORON
MERCURIALS
CARBAMATES
ZIRCONIUM CHEMICALS
VANADIUM CHEMICALS
AGRICULTURAL MAGNESIA

**Zirconium
Basic Carbonate Cake**

**Zirconium
Acetate Solution**

**Zirconium
Sulphate Solution**

Zirconium Oxide

Zirconyl Nitrate

Zirconyl Sulphate

**Sodium Zirconyl
Sulphate**

**Zirconium Oxychloride,
Reagent**

Zircon Sand

Zircon Flour

BERKSHIRE Chemicals Inc.

GRAYBAR BUILDING

420 LEXINGTON AVENUE • NEW YORK 17

Telephone 2-5959 • BERKSHIRE New York

BUSINESS & INDUSTRY

bargaining elections, unfair labor practice charges.

Swapping and Compromise: Some chemical companies are among 18 industrial concerns making up the basis for a case study on "Working Harmony" in labor relations. The experiences of those companies with their respective labor unions seem to show that there's no necessity for tension-producing outcries like these:

- Washington attorney Donald R. Richberg warned of "an attack on the rights of business" by politicians and labor organizers, urged management to fight for its right to be "a ruler of free enterprise."

- Among recent warnings by unionists that there's a move on to "destroy the unions," one union leader declares that "many employers are biding their time for an all-out assault on the unions and their economic gains."

In its report on the 18-company study of "pretty good relations" based on "tough but reasonable bargaining," the nonprofit National Planning Assn. says that in these 18 cases, management prerogatives and union security—at the root of many management-labor clashes—are of minor concern.

"Practical, working harmony has

evolved over a period of years as these companies and unions have learned—through shrewd trading and compromise—how each can best advance its basic interests."

Workweek Down: Chemical companies have been gradually reducing their workweeks since this year's peak of 41.7 hours/week was averaged in March. The latest figure computed by the Bureau of Labor Statistics was 40.9 hours in August. The latest dip in hours worked has brought with it a slight slump in average weekly earnings for chemical workers, from the all-time high of \$75.62/week in July to \$75.26 in August. Average hourly wage rates for chemical maintenance and production employees held steady at the record \$1.84 level, with slight increases for workers in inorganic chemicals, synthetic rubber and soap and glycerine balancing small decreases for those in explosives, pharmaceuticals and other branches.

- **No 'Cold Stand-by':** The Mound Laboratory at Miamisburg, O., operated by Monsanto Chemical for the Atomic Energy Commission, won't be placed in "cold stand-by status" Jan. 1, as had been feared by the employees. Their



Reaping Seaweed—Shantung Style

SHIPPING SEAWEEDS to China for use as a source of iodine for the rubber, woolen textile, and medical industries was a valuable export activity for the Japanese before the last war. Now—if reports can be taken at face value—the Chinese workers of the State-owned

sea-products station on the coast of Tsingtao, Shantung Province, have found a way to cultivate their own home-grown crops. Harvests are so rich, they claim, that even were trade reopened with Japan—there would now be no market for "foreign-bred seaweed."

Now Ready to Serve You...



AROMATIC SOLVENTS

for Insecticides
and Herbicides

NEVSOLV 200

Boiling Range 195°C (383°F) to 280°C (536°F)
Specific Gravity890 to .915
Color Straw

NEVSOLV 30

Boiling Range 130°C (266°F) to 190°C (374°F)
Specific Gravity835 to .845
Color Water White

Neville's new NEVSOLV series is ideally adapted to the insecticide and herbicide solvent field.

These two popular grades have individual characteristics, but other boiling ranges are available to meet your requirements.

These NEVSOLVS are active solvents for DDT, BHC, 2-4-D esters, etc., and are especially clean with good odor.

NEVILLE CHEMICAL CO.

PITTSBURGH 25, PA.

Plants at Neville Island, Pa., and Anaheim, Cal.

Aromatics...

7 in a row

In various stages of engineering and construction are the following:

- 1—Naphthalene Purification—a continuous distillation unit to make high quality Naphthalene. In successful operation.
- 2—Tar Distillation—a continuous tar distillation unit making special coal tar pitch. Ready for operation.
- 3—Aromatic Recovery—a unit to recover aromatics from petroleum stocks. Now under construction.
- 4—Naphthalene Purification—a combination crystallization and distillation unit to make high purity Naphthalene. Now under construction.
- 5—Tar Acid Recovery—a special stripping unit to recover tar acids from plant wastes. Under construction.
- 6—Para Xylene Recovery—a low temperature crystallization unit to make high purity Para Xylene. Under construction.
- 7—Para Xylene Recovery—a low temperature crystallization unit to make high purity Para Xylene. Completing engineering.

Aromatics is but one of the many divisions of processing in which our engineers are experienced. The country is dotted with successfully operating plants with which they have been associated in a design capacity. Particularly numerous are plants involving high or low pressure distillation, azeotropic and extractive distillation, extraction, absorption, and crystallization.

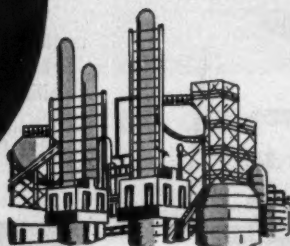
Engineering

Design and Construction
of Process Plants

Design and Construction
of Process Units

Process Evaluations

Economic Studies



BADGER MANUFACTURING COMPANY
230 BENT STREET, CAMBRIDGE 41, MASS. • 60 EAST 42nd STREET, NEW YORK 17, N.Y.

B & I.

union—United Gas, Coke & Chemical Workers (CIO)—had written to President Eisenhower protesting rumored "plans" to slash the plant force to about 40 by Jan. 1. AEC says the recent personnel reduction will cut the force from 610 to about 500, and that employment is expected to continue at the latter figure with Mound serving as "a permanent installation for AEC research and development work."

LEGAL.

Distillation Patent: Armour and Co. has licensed the Arizona Chemical Co., a subsidiary of American Cyanamid, to use Armour's patents on fractional distillation of fatty acids. This move is an outgrowth of a patent infringement suit brought by Armour against Arizona Chemical Co. in Mar. '51. This is the second license in the U.S. granted under the Armour patent on distillation of crude tall oil.

Fire Balls: Fire Ball Corp., Philadelphia, has threatened a suit for damages against Chicago's Director of Public Health. "Fire Balls" are red-colored Christmas tree ornaments filled with carbon tetrachloride and fused to release that fluid if the tree catches on fire.

Fire Ball Corp. says they're harmless in an ordinary-size room, but the Chicago Board of Health fears they're dangerous since the gas is toxic, has demanded that they be withdrawn from the market. With fewer than 20 shopping days until Christmas, Fire Ball wants sales to continue until its proved that Santa and the kiddies are in danger.

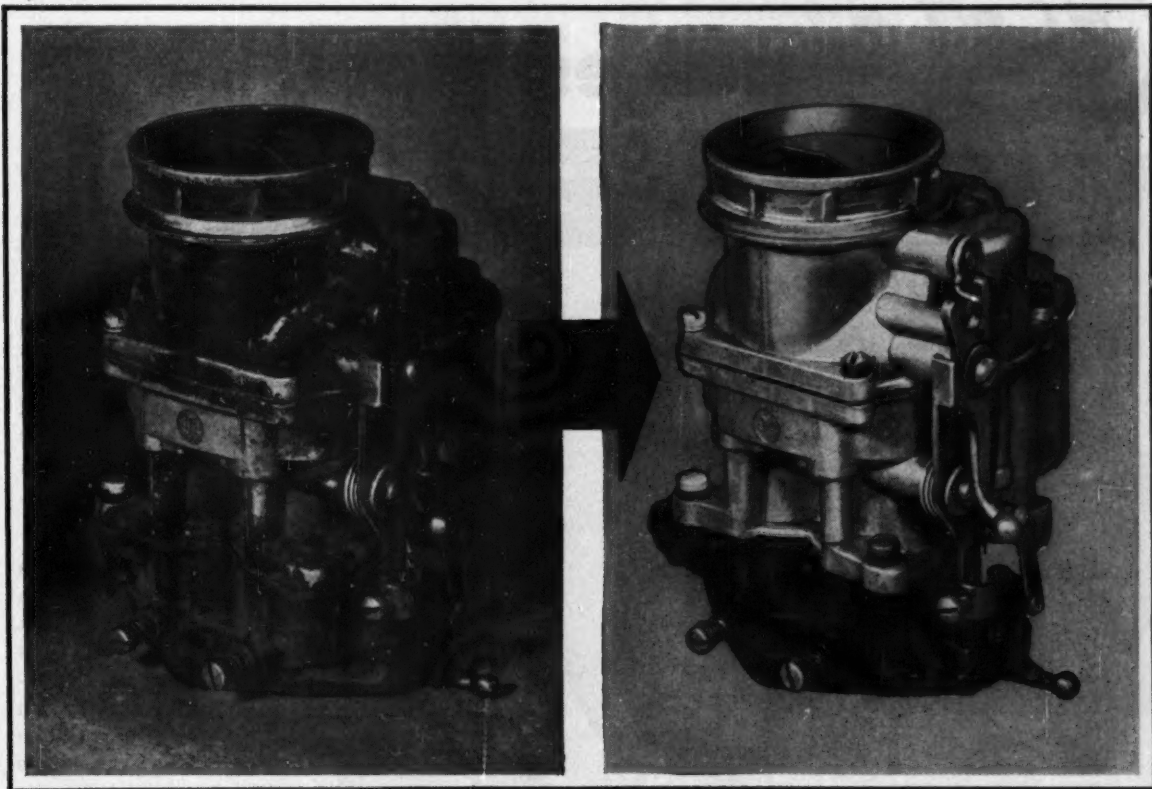
Salt Substitute: Federal Judge Freed of Cleveland has awarded \$10,000 damages in the pain-and-suffering action filed by the late Mrs. Ethel Ridgeway against the manufacturers of "Westsal"—branded harmful by the Food & Drug Administration. The liquid substance was widely prescribed in medical treatments for persons on low-salt diets. The defendants were Foster-Millburn Co., Inc., manufacturers, and Westwood Pharmacal and McKesson-Robbins, Inc., distributors.

Shrimp Verdict: Science saved the day for the A&P Food Stores in its recent tussle with an Ohio woman over crystals found in a jar of shrimp. Chemists proved that all crystals are not necessarily glass, as the plaintiff claimed. Dr. A. M. Solberg of the University of Toledo and Dr. C. A. Greenleaf of the National Canners



USE DOW o-DICHLOROBENZENE

for the removal of soft carbon deposits



This effective solvent is also useful to industry as a dyestuff intermediate

Excellent *solvent* properties, economy of use and low toxicity—three good reasons why o-Dichlorobenzene is a valuable aid to formulators of compounds for grease and soft carbon removal. o-Dichlorobenzene as a solvent also aids in the fabrication of rubber products and removes tar and wool oils in the textile industry.

As an *intermediate* o-Dichlorobenzene serves the textile in-

dustry in the production of dyestuffs. o-Dichlorobenzene has insecticidal properties and is being used in the formulation of products for the control of termites and certain beetles.

For more information to aid in your investigation, write to Dept. OC 3-8 of THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS





With the recent opening of the valves of the newly completed \$20 million facilities at Sterlington, Louisiana, Commercial Solvents Corporation becomes one of the world's largest producers of methanol, for sale to meet the growing needs of expanding American Industry.

For steady, dependable large-volume supply of methanol, CSC is your logical source.

High-quality CSC methanol, produced from natural gas, is being supplied at a minimum purity of 99.85% in tanker, barge, tank car, tank truck and drums to all parts of the United States from conveniently located bulk and distribution points. For further information contact the Industrial Chemicals Div., Commercial Solvents Corporation, 260 Madison Ave., New York, N. Y.

INDUSTRIAL CHEMICALS DIVISION

COMMERCIAL SOLVENTS CORPORATION

ALDEHYDES • ALCOHOLS • ESTERS • AMINES • AMINOALCOHOLS
AMMONIA • NITROPARAFFINS • SOLVENTS • PLASTICIZERS • INTERMEDIATES

B & I.

Assn., Washington, demonstrated to Judge Frank Kloebe and the U.S. District Court at Toledo that the crystals are a natural chemical formation and are dissolved by gastric juices.

Dry Manure: Atkins & Durbrow, Inc., have filed suit for \$50,000 and past profits against the Coastal Dry-Manure Corp. A&D claims its tradename "Driconure" has a distinctive meaning all its own, that the use of "Dry-Manure" on Coastal's product infringes on that name. Also, there is the matter of "a certain set of file cards listing the plaintiff's customers" that allegedly disappeared when Coastal's president, A. V. Conklin, left Atkins & Durbrow, where he had been sales manager.

Increasing the interest in the situation is the fact that Driconure is pegged at \$2.31/80-lb. bag, while Coastal's Dry-Manure is just \$1.64.

Film from Plastic: Closer than ever is the jury trial to decide the patent infringement suit H. A. Levey has brought against Eastman Kodak, Monsanto, Techni-Craft, B. F. Goodrich and U.S. Rubber involving U.S. Pat. 2,045,328 for the production of continuous film from plastic material. Levey and Eastman have stipulated that Levey's 14 production documents are the only ones he'll use at the trial.

FOREIGN

Explosives / India: Imperial Chemical Industries, Ltd. has signed an agreement with the government of India whereby ICI will manufacture India's requirements of commercial blasting explosives. As part of the deal, a new company (Indian Explosives) will be formed with an authorized capital of \$8.4 million. Initially, stock issue will be only \$4.2 million—80% to be subscribed by ICI, 20% by the Indian government. The balance of required capital is expected to be raised by loan—the greater part from the Industrial Finance Corp. of India.

Plant site: near the Bihar coal fields—chief consumer of industrial explosives. Design work, equipment and management staff will be supplied by ICI as well as distribution and technical services. It's planned, though, to train Indians to take over key positions as quickly as possible.

Pharmaceuticals / Brazil: Schenley Laboratories, Inc., has concluded a long-term licensing agreement with Laboratorios Moura Brasil-Orlando Rangel, S.A., Rio de Janeiro, under

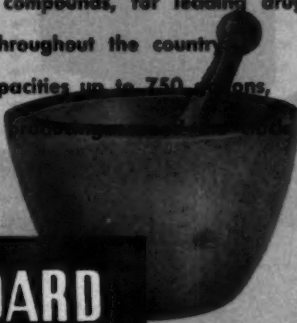
HARMACEUTICALS...

Thoroughly Compounded by Readco Double Arm Mixers



READCO Double Arm Mixers provide rapid, thorough dispersion of ingredients in pharmaceutical compounds, for leading drug manufacturers throughout the country.

Available in capacities up to 750 gallons, these units are

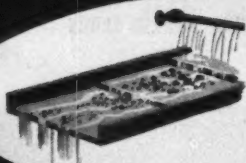


READ STANDARD
CORPORATION

BAKERY-CHEMICAL DIVISION: YORK, PENNSYLVANIA • LOS ANGELES 37, CALIFORNIA

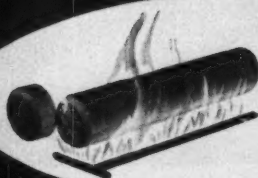


is a versatile chemical with many uses other than the photographic field. For example, it aids in brass purification.

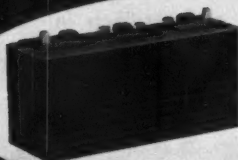


Maas Sodium Carbonate Monohydrate gives better results in granulation of ores and oxides.

Maas Sodium Carbonate Monohydrate cuts costs in heat treating of titanium.



Maas Sodium Carbonate Monohydrate is used for steel carburizer energizer.



Maas Sodium Carbonate Monohydrate gives better results in impregnation of wood separators for storage batteries.

B & I

which the Brazilian company will manufacture and distribute a complete line of Schenley nonantibiotic specialty products.

Terramycin/Philippines: Plans to establish a plant for fabricating dosage forms of Terramycin and other pharmaceutical products in the Philippines have been revealed by Chas. Pfizer & Co. Application to fiscal authorities for permission to launch the project has already been filed, say company officials.

Perfume/Brazil: Companhia Brasileira Givaudan (an associated company of Givaudan-Delawanna, Inc.) has built a plant to manufacture perfume raw materials in Sao Paulo, Brazil, touted as being the first unit to bring industrial production of synthetic aromatic materials to Brazil. Output is chiefly slated for the growing soap, perfumery and foodstuffs markets in South America.

Chlorophyll/Denmark: Denmark expects to become at least partly self-sufficient in chlorophyll when production begins at the Bovaerk, Bornholm, plant next month. Initial capacity: 1,600 kilos of chlorophyll annually—half Denmark's present requirements. Last year, Denmark imported all her chlorophyll from the U.S. and Great Britain.

Urea/India: Worldwide bids have been invited for erection of plant and machinery in connection with Sindri Fertilizer's projected urea and ammonium nitrate plant in India. A mission of company officials, back from a global tour to determine progress on utilization of mica urea, suggest a daily production of 35-60 tons of urea, 100-150 tons of ammonium nitrate. Cost: 100-150 million rupees.

Potash/Canada: Potash Co. of America has been granted a permit for potash prospecting on 100,000 acres near Saskatoon, Saskatchewan, Canada. Company officials in Denver say \$220,000 will be initially spent on exploration in the area and that the permit may be converted to a lease on a portion of the land involved (not to exceed 10,000 acres) if potash ore is discovered within three years.

U.S./Mexican Cooperation: A contract to modernize and expand Petroleos Mexicanos' Minatitlan refinery has been awarded to the Fluor Corp., Ltd., Los Angeles. Scope of the work includes a topping unit, feed preparation unit, T.C.C. catalytic cracking

EVAPORATION in SECONDS!

The unique Rodney Hunt Turba-Film Evaporator gives incredibly fast one-pass evaporation of liquids, slurries and gases... especially heat-sensitive substances... all by continuous process!

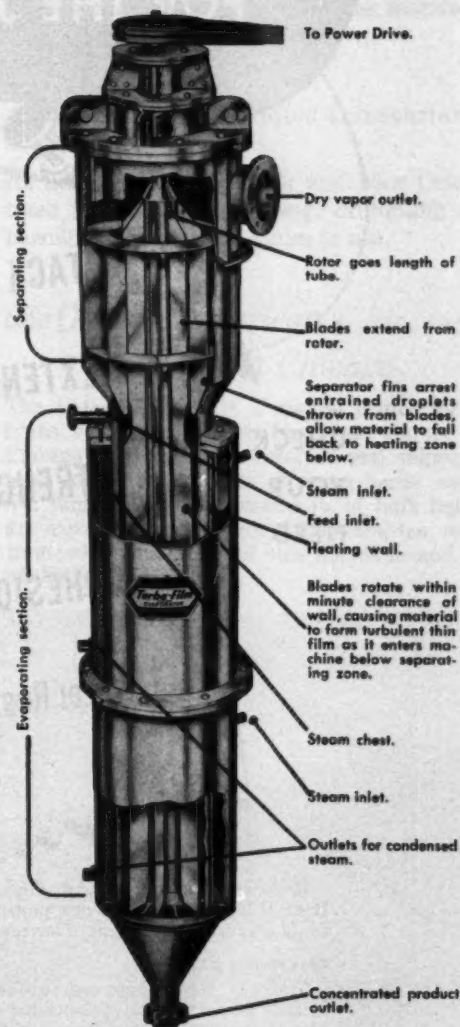
The Turba-Film Evaporator employs a totally different concept of evaporation. Makes heretofore extremely difficult evaporating processes simple and rapid. Actually evaporates most substances in a few seconds!

Here's how the patented Turba-Film® works. The substance to be evaporated is fed into the evaporating section. Here it is whirled against the wall by controlled-speed rotor blades. This forms a thin turbulent film, centrifugally held to the wall, which spins in a gravity flow through the chamber and out... completing the process. The vapors rise into the separating section where rotor blades beat out any entrained droplets and force them back through the evaporating section.

So thorough is this Turba-Film process that no substance requires re-circulation... the desired concentration is achieved in one pass! So fast is the Turba-Film action that proper heating is done in seconds. Colors, flavors, nutritional and other valuable properties are retained to a much higher degree... especially in heat-sensitive substances.

Because of its new principle, the Rodney Hunt Turba-Film Evaporator (Luwa Process, Switzerland) permits quick change-over from one product to another; prevents foaming and frothing difficulties; allows constant quality control to be maintained; permits concentration to very much higher viscosities and solids content than is practical with conventional equipment.

Please consider our complete engineering staff at your disposal for consultation on any possible Turba-Film application. We have the facilities for making test runs in our pilot plant: or we can provide a portable laboratory unit for use in your own plant. Mail this coupon for free color brochure explaining the Turba-Film Evaporator in detail.



Models available in ranges from 40 to 2500 pounds of water evaporation per hour. Stainless steel construction.



Manufacturing Engineers since 1840

RODNEY HUNT MACHINE COMPANY

Process Equipment Division

29 Vale Street, Orange, Massachusetts

RODNEY HUNT MACHINE COMPANY
29 Vale Street, Orange, Mass.

Please send Free brochure giving details of Turba-Film Evaporator

Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....

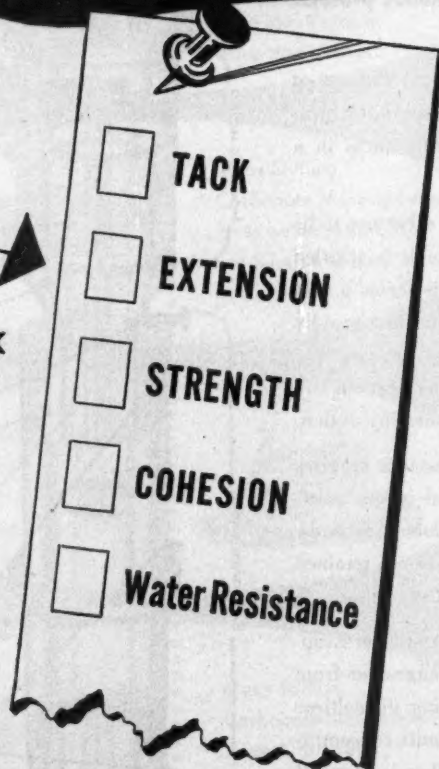
Type of Industry.....Product.....

☐ I want details on your testing program.

CW 12-53

RESINS FOR THE JOB

CHECK
YOUR
NEED



Resin emulsions for natural, GRS, Neoprene and Buna N latices offer many new properties in addition to the standard requirement of increased tack.

Case History #235

Customer needed improved tensiles and water resistance from a GRS latex compound — at a low cost. Many experiments with clays and other fillers failed to meet the requirements — but ARCCO resin emulsion gave the GRS latex the added qualities needed.

You too can get better tensiles from GRS latices and lower emulsion costs with GRS as well as with other latices. These and many other applications are possible through the use of ARCCO resin emulsions.

What is your problem? Whether it is standard or unique we would be glad to have the opportunity of helping you reach a satisfactory solution. Write today.



AMERICAN RESINOUS CHEMICALS CORPORATION

RESIN EMULSIONS, SOLUTIONS AND HOT MELTS FOR ADHESIVE BASES, BINDERS, COATINGS, SIZES AND SATURANTS

GENERAL OFFICES: 103 FOSTER STREET, PEABODY, MASSACHUSETTS

IN CANADA: American Resinous Chemicals of Canada, Ltd., Toronto, Canada

B & I.

unit, fractionation unit, gas concentration unit, and polymerization unit. The cat cracker is the first such unit to be installed by Petroleos Mexicanos.

KEY CHANGES . . .

Harry B. Warner, to vice-president, technical, B. F. Goodrich Chemical Co., Cleveland, O.

Tilton H. Dobbin, to assistant treasurer, Mathieson Chemical Corp., Baltimore, Md.

Leon W. Seigle, to manager, and **Fred B. Johnson**, to assistant manager, Intermediate Sales, National Aniline Div., Allied Chem. & Dye Corp., New York City.

Edward G. Littel, to assistant to the president, Vitro Corp. of America, New York City.

Wright W. Gary, to president and chief executive officer, Attapulugus Minerals & Chemicals Corp., New York City.

J. Harry DuBois, to director, Mycalex Corp. of America, Clifton, N.J.

Frederick A. Hessel, to commercial research manager, General Aniline & Film Corp., New York City.

Richard J. Both, to sales manager, agricultural chemicals, Naval Stores Dept., Hercules Powder Co., Wilmington, Del.

Lloyd Drake, to sales manager, Chemical Color Div., Reichhold Chemicals, Inc., New York City.

R. A. Knight, to assistant sales manager, Equipment Div., National Research Corp., Cambridge, Mass.

George O. Bohrer, to chief engineer, Magnesium Corp. of America, East Chicago, Ind.

Robert M. Aude, to manager, Fords, N.J., plant, Heyden Chemical Corp., New York City.

Alexander E. Drukker, to senior research chemist, Lakeside Laboratories, Inc., Milwaukee, Wis.

John M. Hoerner, to director of purchases and sales, Chemical Div., Armour and Co., Chicago, Ill.

Alfred J. Oxenham, to technical sales representative, Coal Chemicals Div., Pittsburgh Coke & Chemical Co., Pittsburgh, Pa.

William H. Erwin, to international division director, Industrial Chemicals Dept., Atlas Powder Co., Wilmington, Del.

in out

In 5 great markets General American offers you complete bulk liquid storage terminal facilities with no capital investment on your part.

You use modern facilities, pipelines, manifolds, blending equipment.

You have complete privacy.

All methods of bulk liquid transportation available.

At the Ports of New York and New Orleans there is high-speed canning, drumming and barrelling equipment—yours to use.

use General American's "for lease" facilities at Chicago

The Chicago region is a natural center for all types of transportation. Last year alone, the Chicago industrial area received and shipped a total of 46,198,867 tons of water-borne cargo. Via tanker alone, 3.9 million lb. of bulk liquids are exported every month. Tank cars, too, move tremendous quantities of bulk liquids in and out of this giant rail center.



for dependability, see GENERAL AMERICAN

5 TANK STORAGE TERMINALS

in Important Marketing Centers

- Port of New York (Carteret, N. J.)
- Houston
- Port of New Orleans (Goodhope, La.)
- Corpus Christi
- Chicago

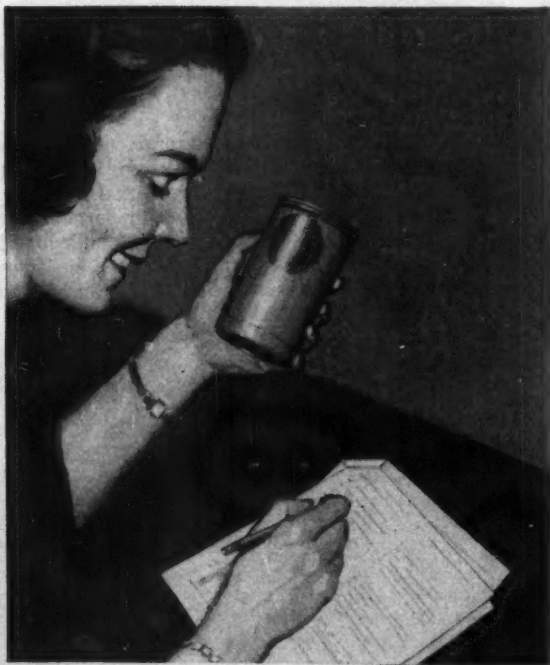
GENERAL AMERICAN TANK STORAGE TERMINALS

a division of General American Transportation Corporation
135 South La Salle Street, Chicago 90, Illinois

now ready... **1953** nation-wide **Du Pont**

Proves Fast-Growing Use

REPORTS OPINIONS OF MORE THAN 2500 FAMILIES



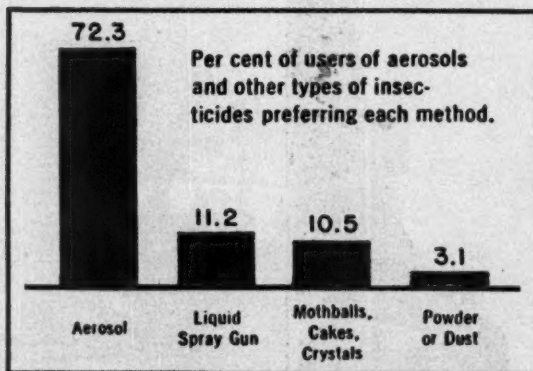
Year after year, the Du Pont Company's nation-wide survey of the market for aerosol products has shown that consumer and dealer acceptance of this modern method of packaging is steadily expanding. Today, according to the most recent consumer study, just completed, almost nine out of every ten families (86.9 per cent) have used one or more aerosols. In 1951 only 57.1 per cent of families interviewed had used aerosols.

The increase in number of users is reflected in all segments of the study; the various product types, geographical location of respondents, family income bracket

and age groups. It conclusively indicates nationwide endorsement of the aerosol method of dispensing a variety of familiar products.

BETTER THAN 6 TO 1 PREFER AEROSOL INSECTICIDES

An example of consumer preference for aerosols is graphically illustrated in the case of insecticides. Among users of aerosol insecticides and other types, 72 per cent preferred the aerosol method; whereas the next highest preference was for liquid sprays, preferred by only 11 per



cent. This is almost a 7 to 1 preference for aerosols over any other method of dispensing insecticides. A strong preference for the aerosol method is also indicated in the other product types studied.

HOW THE SURVEY WAS CONDUCTED

A panel of 2500 families of various age groups and incomes, situated in towns and cities throughout all 48



"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

"FREON" SAFE

Aerosol Market Survey of Aerosol-Packed Products

states, was asked by means of a 6-page questionnaire what they think of aerosols in general. In addition, many other important questions were asked: What types of aerosols had consumers used? What types did they prefer? Where had they purchased the product? What did they think of it? Were they satisfied or dissatisfied with it? These and many more timely questions are answered in this new, up-to-the-minute analysis of the market for aerosols.

The answers provide a reliable, comprehensive picture of today's buyers . . . the aerosol manufacturers' customers. The entire study and tabulation of results were conducted for Du Pont by specialists in the field of research.

DIGEST OF SURVEY FINDINGS ... A HANDBOOK OF MARKET DATA

These high lights of the aerosol market have been assembled by the Du Pont Company as a continuing service to the aerosol industry . . . an aid in forming manufacturing, distributing and marketing plans. The results of this most recent study will be made available in a compact, 20-page Digest . . . a veritable handbook of market data. First copies of the Digest will be distributed at the C. S. M. A. (Chemical Specialty Manufacturers' Association) Convention, December 6, 7 and 8, 1953, in the Mayflower Hotel, Washington, D. C. A talk, outlining the aerosol market survey and interpreting many of the facts contained in it, will be presented during the Convention. Time and date of the talk will be announced at the Convention, or you may obtain this information by visiting the Du Pont



headquarters suite at the Mayflower Hotel.

If you miss the Convention, or prefer to have your copy of the 1953 Aerosol Market Survey Digest sent by mail . . . a request on your company letterhead will promptly bring a copy postpaid and without obligation.

"FREON" PROPELLENTS USED IN MAJORITY OF AEROSOL PRODUCTS

There are many reasons why the majority of pressure-packed aerosol products now on the market are packed with one or more "Freon"* fluorinated hydrocarbon propellents. "Freon" propellents are prepared to meet exacting requirements of pressures, solubility, physical make-up and other product characteristics. In addition, "Freon" propellents are safe . . . nonflammable, nonexplosive, noncorrosive, virtually nontoxic, and are manufactured under laboratory-controlled standards that insure purity and uniformity of the product.

TECHNICAL SERVICE AVAILABLE

If you are considering the possibility of entering the aerosol market by manufacturing one or more pressure-packed products under your own label, you are cordially invited to consult Du Pont for technical assistance in formulating a product using a "Freon" propellant. A booklet, "Package for Profit," containing information of interest to anyone thinking of entering the aerosol business, is available upon request. Write for a copy. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Del.



PROPELLENTS



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

RESEARCH

New Push for Paper

With a covetous eye on burgeoning paper production statistics, Naugatuck Chemical Div. (U.S. Rubber Co.) is quietly entering its bid for a bigger chunk of the tasty trade in paper chemicals. Instrument of its hopeful plans is an intensified research program newly commissioned in specially designed laboratory facilities at the division's Naugatuck, Conn., headquarters.

It's plain that the company is after more than an odd tidbit. Paper production in this country has zoomed from nearly 8 million lbs. in 1932 to better than 24.4 million lbs. in 1952.

One paper chemicals supplier alone is reported to be supplying the industry with 12 million lbs. of latex annually.

To tap this bountiful market, Naugatuck is putting its faith in new products. The goals are new and improved coatings, binders, latices, wet-strength additives, etc. Now in development are GR-S latices for beater addition; grease-resistant polymer coatings; plastic latices for stiffening, binding, coating and sizing. Polyesters, incidentally, appear promising in a number of molding, laminating, impregnating and coating applications.

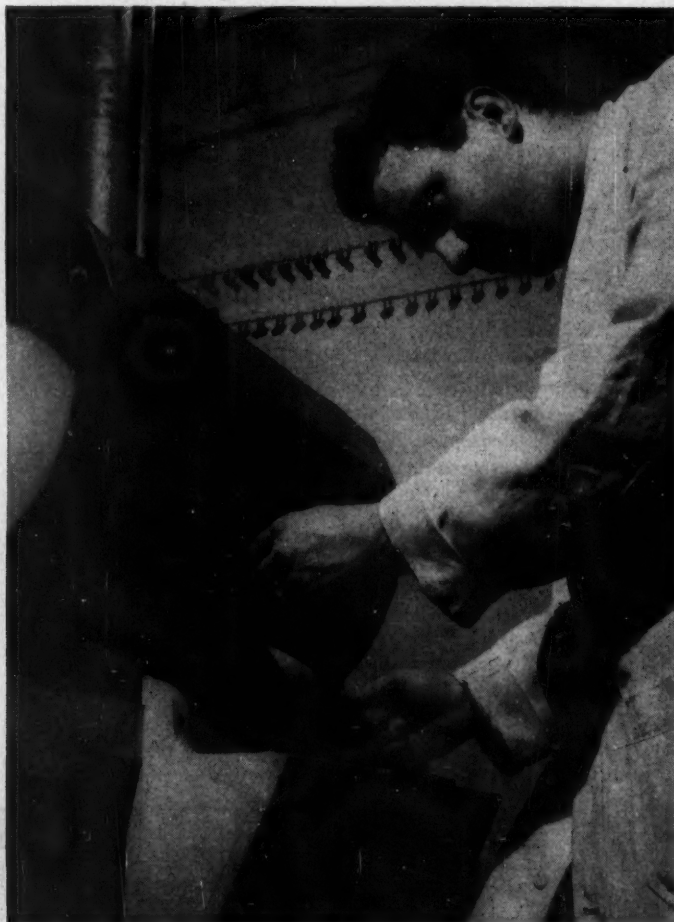
Tied in with the laboratory is a



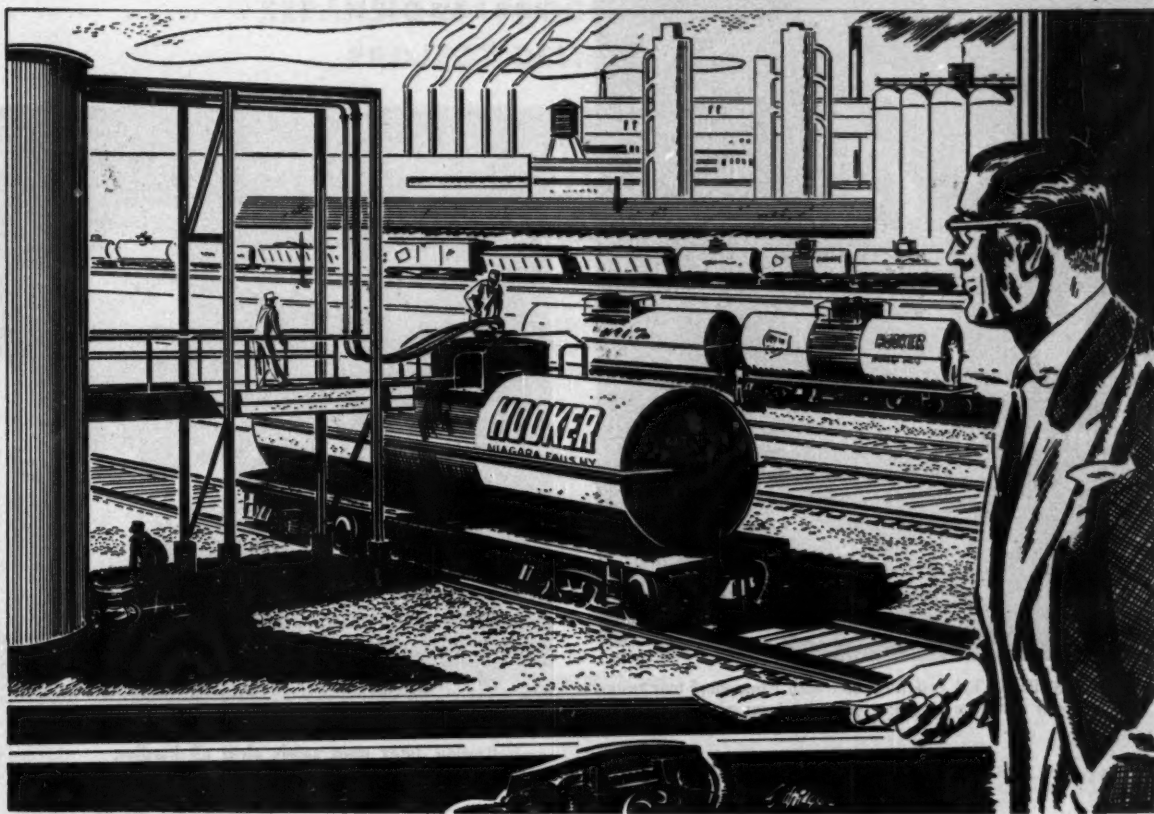
PAPER EXPERT Spector heads Naugatuck's hypod laboratory research.



SATURATING machine, operated by researcher Anna Sultana, impregnates paper with latex.



REVITALIZED LAYOUT integrates development work. Paper being made here will be used to test new latex.



For smoother, better processing— buy the Uniformity Hooker Caustic Soda gives you

Month after month, year after year—you can standardize processing methods, and get consistent results, when you use Hooker Caustic Soda.

You need never adjust your process to meet variations in caustic soda shipments. You can be sure each new shipment closely

matches your current inventory.

Uniformity, from shipment to shipment, is the result of close quality checking at Hooker. More than a score of inspections and analyses safeguard the uniformity of the Hooker caustic you buy.

Do you agree, with leading companies in 30 different indus-

tries, that this is a good reason to *standardize* on Hooker caustic soda?

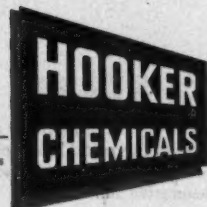
If you do, a letter or a phone call to the nearest Hooker plant or office will quickly bring you the product data and other facts you need to make your decision.

You can standardize on Hooker Caustic Soda.

Forms: Liquid 50% and 73% • Flake • Solid • Special fine flakes

Containers: Tank cars • Tank wagons • Barges • Drums

For fast service, phone: CHICAGO Central 6-1311
LOS ANGELES NEVada 6-3826
NEW YORK MUrray Hill 2-2500
NIAGARA FALLS 6655
TACOMA Broadway 1215



From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

HOOKER ELECTROCHEMICAL COMPANY

3 Forty-Seventh St., Niagara Falls, N. Y.

Please send ☐ data sheets on Hooker Caustic Soda; ☐ Bulletin 100 describing Hooker products and services.

Name Title

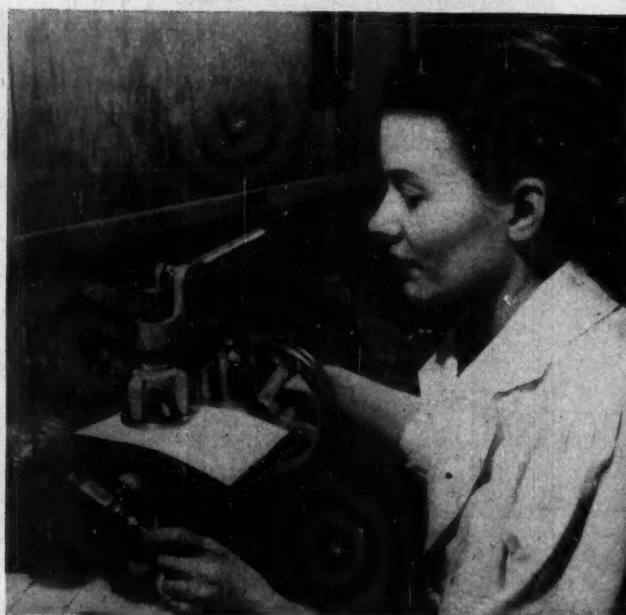
Company

Address

City Zone State



TEAR STRENGTH is determined with Elmendorf tear tester. Additional tests are in store for treated sample.



BURSTING STRENGTH check is case in point. Before commercialization, latex must safely clear all hurdles.



pilot plant for trial production of materials that have run the gantlet of laboratory tests. Though still in its infancy, the new research program has already provided several bright prospects for pilot-plant production.

Aware that shiny new equipment, no matter how efficient, cannot conceive a single new product, Naugatuck went to the paper industry for a man to head its revitalized research program. The choice: seasoned Harold Spector, formerly with St. Regis Paper Co., at Watertown, N.Y.

Spector's researchers, if successful in their new product quest, could trigger a hoped-for spiral of new demand for paper chemicals. It's the contention of those closest to the paper business that long-term increases in demand are principally the result of better, more appealing papers made possible by chemical treatments.

APPEARANCE can be as important as performance in paper product. Carl Miele runs coated paper through glosser to see if it will take decorative finish.

NEW PROJECTS?

EXPANSION? PROCESS CHANGES?

PROJECT DESIGN?

Whatever your engineering problem..

.. you can look with confidence to Vulcan's record of outstanding achievement in serving the chemical and process industries. Vulcan Engineering can bring experienced, up-to-date organization service to bear on your special engineering problems.

PRELIMINARY EVALUATION

Process comparisons and cost surveys to indicate direction and value of further detailed engineering design.

DEVELOPMENT AND PILOT PLANTS

Initial process designs developed from laboratory stage to semi-commercial operation in pilot plants . . . Close supervision and follow-up by experienced engineers.

PROCESS DESIGN AND ENGINEERING

Process unit design based on pilot plant, operating or basic data . . . Equipment, accessory and instrument specifications . . . Estimates of capital investment and operating costs.

PROJECT ENGINEERING

Thorough coordination to maintain job schedules . . . Design check, detail specifications, procurement and overall supervision.

MECHANICAL ENGINEERING

Data and drawings ready through direct supervision of plant and equipment layout, piping layout, detail drawings, material lists, and structural and electrical engineering services.

PROCUREMENT

Strict maintenance of job budgets and schedules by careful analysis of competitive bids, sound purchasing and alert expediting . . . Periodic reports to client.

CONSTRUCTION

Experienced field management of site preparation, excavation, foundations, erection, installation, painting, insulation, testing, and clean-up . . . Complete set-up of plants for initial operation.

INITIAL OPERATION

Significant savings through initial charging and thorough test runs by our own experienced engineers, plus careful training of client's operating staff.

Your inquiry into any or all of these services
in terms of your particular needs is invited.



VULCAN ENGINEERING DIVISION

The VULCAN COPPER & SUPPLY CO., General Offices and Plant, CINCINNATI 2, OHIO

NEW YORK BOSTON HOUSTON SAN FRANCISCO
VICKERS VULCAN PROCESS ENGINEERING CO., LTD., MONTREAL, CANADA

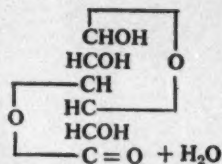
DIVISIONS OF THE VULCAN COPPER & SUPPLY CO.:

VULCAN ENGINEERING DIVISION • VULCAN MANUFACTURING DIVISION • VULCAN CONSTRUCTION DIVISION • VULCAN INDUSTRIAL SUPPLY DIVISION

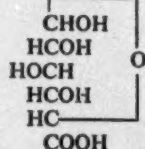
GLUCURONOLACTONE

versatile
biochemical
with
chemical
possibilities

Glucuronic Acid has been known for some time to have important biochemical functions. Glucuronic Acid is of increasing interest in studies relating to growth, rheumatic disorders, detoxifying mechanisms, solubilization of water insoluble pharmaceuticals, and as an adjunct for antibiotics. In water, Glucuronolactone slowly hydrolyzes and establishes an equilibrium with free Glucuronic Acid:



GLUCURONOLACTONE
(D-glucopyranuronic- δ -lactone)



GLUCURONIC ACID
(D-glucopyranuronic acid)

Glucuronolactone is capable of undergoing reactions involving three types of functional groups: aldehyde hemiacetal . . . hydroxyl . . . carboxyl. A number of potentially valuable derivatives are possible—glucuronosides, glucuronates, amines, amides, ethers, and esters.

Your requests for technical assistance, literature, and samples are cordially invited.

"Fine Chemicals from Corn"

Chemical  Division

**CORN PRODUCTS
REFINING COMPANY**

RESEARCH

Turnover Profile

Mobilized by an alarming turnover rate among industrial researchers, Bureau of Labor Statistics has set about the task of shedding light on the "how" and "why" of the situation. One result of their efforts is a new outline of the big picture drawn from data contained in a just-issued study* of industrial research manpower and costs.

Here's what the bureau found:

- Annual separation rate of research engineers and scientists during the last half of 1951 was 16.4 per 100 employed. Military calls (reserve and selective service) accounted for only 3.0 per 100; the remaining 13.4 per 100 comprised quits, firings, layoffs, retirements, deaths. Although no breakdown is available on nonmilitary separations, the bureau states that deaths and retirements were responsible for a relatively small proportion.

- Petroleum refining was the industry with the lowest separation rate: 8.8 per 100 researchers. Dubious distinction of possessing the highest separation rate is pinned on the aircraft industry for its resounding 20.8 per 100. Runner-up for low-man honors: the chemical industry with 13.5 per 100.

- No consistent relationship exists between size of a company and rate of personnel turnover. In some industries, the smallest firms had the largest turnover; in others, just the reverse is true.

- Over-all separation rate for the last half of 1951 was markedly higher—18%, to be exact—than that for the comparable period of 1950. Personnel losses had become more frequent in all industries and in companies of all sizes. Military separations, the report points out, were too few to be a major factor in this turnover boost. Chief culprit, explains the bureau, was transfers to other more attractive employment.

Two years behind the current situation, the new BLS figures are nevertheless the latest available. Recognizing the hazards of extrapolating statistical data, the bureau is especially alert to the danger of minimizing the future impact of the military situation.

By way of warning, it underscores a basic fact of modern life: "Under present [selective service] legislation, nearly every young man has an obligation to serve for a total of 8 years, including both active duty and service

* Bulletin No. 1148—"Scientific Research and Development in American Industry," prepared in cooperation with Dept. of Defense.

in the reserves. Thus, there is a strong likelihood that the number of persons in the reserves will increase . . . become an even more important problem in scientific manpower planning."

Lab Addition: A new \$800,000 research center is in the cards for Emery Industries, Inc. (Cincinnati, O.), will provide 30,000 sq. ft. of elbow room for the company's long-range studies and chemical engineering research.

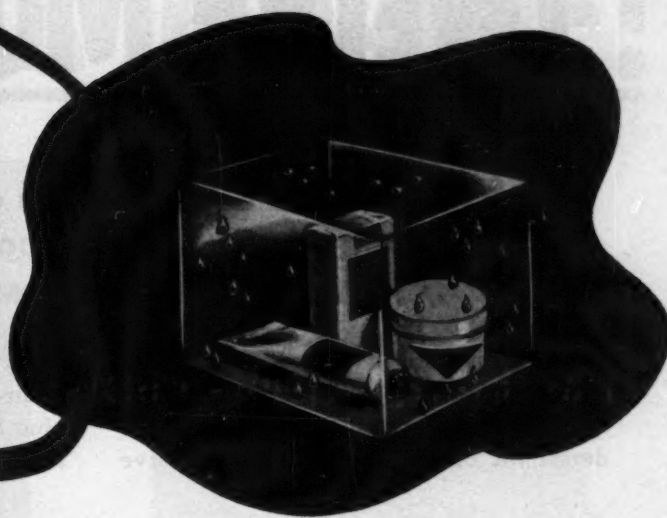
Keeping a Head: Here's one for beer drinkers. Chemist Arnold Steiner is the recipient of a new patent (U. S. 2,659,675) on a technique for preserving the head on a glass of beer. Steiner's foam stabilizer is a salt of alginic acid, which, according to the inventor, can keep the suds on a mug of beer for a half hour. Kelco Co. (San Diego, Calif.) is assignee of the Steiner patent.

Patent Primer: Kansas City technical personnel are gaining a working knowledge of the patent code in six easy lessons. Meeting once a week, a six-week patent law course conducted by Midwest Research Institute is beamed especially at industrial researchers.

Ideas Wanted: The Army Chemical Corps is now in the market for answers to a spate of problems fostered by its chemical, biological and radiological warfare (CBR) program. Among the corps' CBR requirements: new adsorbents to replace charcoal in protective masks; rapid detection methods for airborne CBR agents; filters for removal of harmful particles from aerosols, and devices for counting and measuring removed particles; methods of neutralizing destructive liquids, vapors and radiation; and new methods of safeguarding the respiratory tract against the inhalation of toxic agents. All proposals bearing on CBR warfare may be forwarded to Commanding General, Chemical Corps Research and Engineering Command, Army Chemical Center, Maryland. Patent rights, the corps emphasizes, will be protected.

Safety Guide: "A Guide for Safety in the Chemical Laboratory" is the descriptive title of a comprehensive new tome prepared by Manufacturing Chemists' Assn.'s (Washington, D.C.) safety committee. The volume, pegged at \$4.25, provides up-to-date information on handling of hazardous chemicals, protection against radiation, design of safe laboratories, first-aid measures and personal protective equipment.

BUY POLYOLS ON FACTS



gives permanent protection...

If you manufacture pharmaceuticals, cosmetics, foods, cork and tobacco products or glue specialties, the humectant you use has a profound effect on your product. Sorbitol is a more effective humectant because it is *permanent*. It will not disappear, because it is non-volatile. It will not decompose in use, or react with cold dilute acids or alkalis. Products conditioned with sorbitol gain greater consumer acceptance, because they have *lasting* protection against humidity changes.

...at lower cost

In the face of general inflation, the price of sorbitol has dropped continually since 1947 . . . while other polyols have fluctuated widely. This steady downward trend continues, as Atlas continues to expand and improve manufacturing facilities.

COMPARE ALL FOUR POLYOLS

before you buy . . . and select the one that proves superior on every count. Atlas offers complete technical information on sorbitol, and expert engineering service to help apply sorbitol in your specific product. Send for your free copy of "The Sorbitol Story," telling why sorbitol is the best buy in polyols.



ATLAS

INDUSTRIAL CHEMICALS DEPARTMENT

POWDER COMPANY

WILMINGTON 99, DELAWARE

offices in principal cities

ATLAS POWDER COMPANY, CANADA, LTD.
BRANTFORD, CANADA

TWELVE MONTHS OF

NATIONAL CARBON'S GREATEST YEAR OF PRODUCT DEVELOPMENT BOOSTS THE BUYING POWER OF YOUR EQUIPMENT DOLLAR

Here is recommended reading for those who want a dollar that will buy *more* instead of *less* than a year ago. These catalog pages detail the results of the most intensive

product-development program in our history —man-hours and money devoted to adding value *in every way possible* to your new "Karbate" impervious graphite equipment.

HERE'S WHAT WENT INTO THE PROGRAM:

- A material unique in corrosion resistance
- Design know-how and facilities pre-eminent in the field
- Application experience of long standing

HERE'S WHAT CAME OUT OF THE PROGRAM:

- Higher unit capacities
- Lower costs per unit of product through increased efficiency
- Still greater ease of installation and maintenance
- Increased ruggedness and flexibility
- Greater simplicity and alterability than ever before

SEE THEM AT THE CHEMICAL SHOW • NOV. 30 — DEC. 5
CONVENTION HALL, PHILADELPHIA, PA.

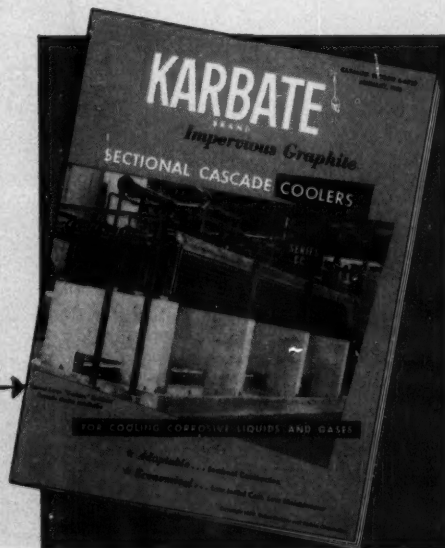


Catalog Section S-6740— HEAT EXCHANGERS

Chemical resistance to practically all corrosive fluids; resistance to severe thermal shock; high heat-transfer rates; low maintenance costs.

Catalog Section S-6820— CASCADE COOLERS

Low initial cost; radiused returns for low pressure drop; redwood water-guide strips; three standard models in stock.



PROGRESS IN VALUE!

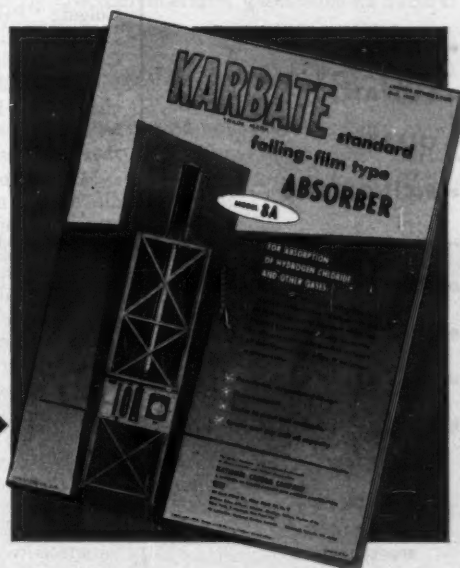


Catalog Section S-7250 - CENTRIFUGAL PUMPS

Capacities from 5 to 1500 G.P.M.;
type SN armored connections;
pump efficiencies to 60%;
discharge pressures to 100 psi.

Catalog Section S-7460 - HCL ABSORBER

Produces up to 20 tons per day 22° Baumé Acid;
pneumatic automatic control; compact, lightweight;
minimum installed cost.



Catalog Section S-7000 - PIPE AND FITTINGS

Readily installed; long lasting;
easily maintained;
unaffected by most corrosive fluids.



Send for literature today!

The term "Karbate" is a registered trade-mark
of Union Carbide and Carbon Corporation

NATIONAL CARBON COMPANY

A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

District Sales Offices: Atlanta, Chicago, Dallas, Kansas City,
New York, Pittsburgh, San Francisco

IN CANADA: National Carbon Limited, Montreal, Toronto, Winnipeg

NATIONAL CARBON PRODUCTS

HEAT EXCHANGERS • PUMPS • VALVES • PIPING • TOWERS • TOWER PACKING • SULPHURIC ACID CUTTERS
HYDROCHLORIC ACID ABSORBERS • STRUCTURAL CARBON • BUBBLE CAPS • BRICK • GRAPHITE ANODES • BRUSHES

Fatty Acid Esters

- STEARATES
- LAURATES
- OLEATES
- RICINOLEATES

- WETTING AGENTS
- THICKENERS
- PLASTICIZERS
- EMULSIFIERS

MADE TO
MEET YOUR
SPECIFICATIONS



THE FLAME AND THE FLASK—SYMBOL OF QUALITY

The C. P. Hall Co.
CHEMICAL MANUFACTURERS

5147 W. 67th Street, Chicago 38, Illinois

AKRON, OHIO

NEWARK, N. J.

CHICAGO, ILL.

LOS ANGELES, CAL.

SPECIALTIES Pother over Lather

It's a patent fight that now puts the kleigs on aerosol shave creams, already the wonder product in a spectacular field.

Carter Products, Inc., maker of first-on-the-market Rise has sued five firms—including Colgate—for patent infringement.

When the Official Patent Gazette for October 13 dropped on the desks of many specialties makers, the brief abstract in the lower right-hand corner of page 491 didn't mean much to most of its readers. But it abruptly meant plenty to five firms—for on that same day Carter Products, Inc. (New York) filed suit in Baltimore against Colgate Palmolive Co., Noxzema Chemical Co., Read Drug & Chemical Co., and Stalfort Pressure-Pak (also John C. Stalfort & Sons). The suit charged all five with infringing Carter's patent (2,655,480) on aerosol shave creams.

Matters got under way by the middle of last month, with Colgate attorneys completing pretrial examination of Joseph G. Spitzer and Marvin Small, to whom the patent had been assigned, and who are now with Carter. This week, examination-taking of pretrial depositions—will likely move to New York (Spitzer and Small were questioned on scientific points in Baltimore).

Carter has four well-known specialties; Little Liver Pills, Nair, Arrid, and Rise—of which Rise has been one of the most successful. It was the first of the push-button shave lathers—a specialty that now sells 16 million units yearly. Carter's action to defend Rise isn't particularly surprising; it has been in suits involving both Nair and Arrid, too.

The move this time was apparently designed to cover all concerned with shave-cream manufacture, packaging and distribution. Colgate and Noxzema fit the first category, Stalfort the second, Read the third. Carter seemingly hoped for a quick decision; present indications are that trial will begin Jan. 2.

Undermined: The story of the infringement, as Carter lawyers outline it in the complaint, runs like this:

Back in 1948, Joseph Spitzer and Howard Small conceived the idea of putting a lather-forming composition in a pressurized package. They were not then with Carter. To assist them in working out formulation problems connected with such a product, Spitzer hired the consulting firm of Foster D. Snell, Inc.

(It is to take depositions of Snell and others that the pretrial examination is coming to New York.)

Snell put two researchers to work on the problem; Spitzer gave them full information on his developments to that time. These two researchers were Norman Fine and Irving Reich.

Spitzer also looked around for a firm to commercially exploit his idea; Carter liked the looks of canned shaves and in Apr. '49 was let in on the secrets, agreed to an "exclusive" manufacturing agreement.

Problems of formulation were pretty well whipped by the fall of '49. In October, the suit charges, Reich and Fine, Snell's chemists, assigned to Spitzer their entire rights in the new product, and Nov. 2, '49, Spitzer filed for a patent on a "soap solution and volatile propellant of low water solubility in liquid phase . . . enclosed in a pressure-tight container, which upon release from the container is propelled and expanded into a lather by vapor pressure of the . . . propellant."

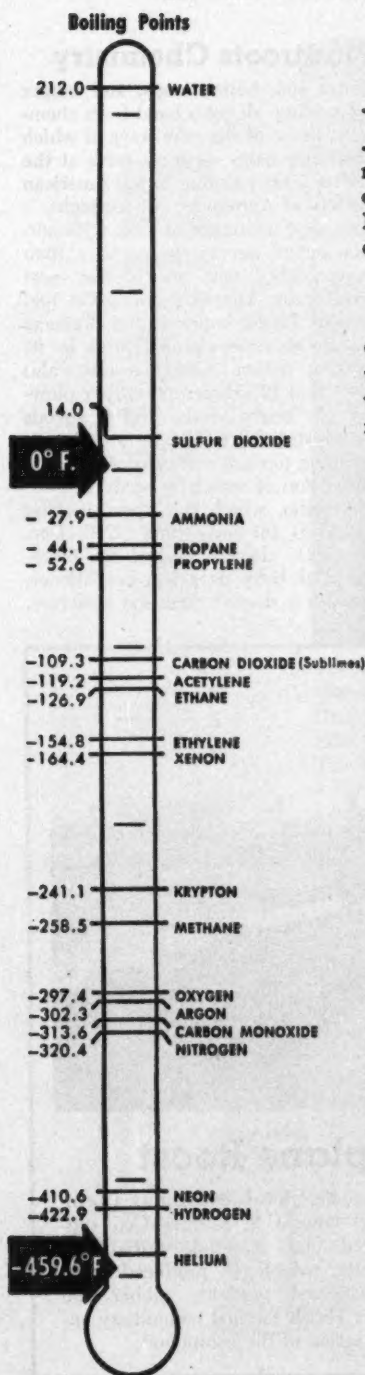
Carter, and Spitzer and Small, signed exclusive manufacturing agreements for Rise on Feb. 8, '50, and shortly after began introduction of the very successful product.

Unkindest Cut: On Aug. 15, '50,



CANNED SHAVE: Patent points to trouble for fastest-growing aerosol product.

NEW PROFITS thru Low-Temperature Liquefaction and Separation of Gases



Take Dollars out of By-Product Gases, Natural Gas, Air; Cut Storage Costs

Low-temperature processes open new profit possibilities for the chemical, petroleum, steel and related industries. They make it feasible to recover valuable products from many gas mixtures . . . or, used in place of other recovery methods, widen profit margins. (See examples in chart.) Reduced to a liquid state by low temperatures, gases such as natural gas can also be stored at less cost.

What Can Low Temperatures Do For You?

Consider your fluid flows, or mixtures you now dispel or burn as waste, use for fuel, or can get at low cost (natural gas) or no cost (air). Can these "resources", plus low-temperature processing, provide additional revenue?

SOURCE	PRODUCT	SOURCE	PRODUCT
Natural gas	Hydrogen	Refinery gases	Deasphalted oil
Natural gas	Ammonia	Refinery gases	Gasoline
Coke oven gas	synthesis gas	Refinery gases	Toluene
Cracked products	Methane	Refinery gases	Xylenes
Cracked products	Ethane	Ammonia purge streams	Argon
Cracked products	Ethylene	Reactor gases	Sulfur dioxide
Cracked products	Propene	Carbon dioxide	Dry ice
Air	Ethyl benzene		
	Oxygen		
	Nitrogen		
	Argon		

Consulting-Design Engineering Service

Ask *Air Products* to survey your low-temperature possibilities. Leader in its field, *Air Products* has designed and built over 600 low-temperature gas separation plants. Our more than 100 engineers—specialists in low-temperature process engineering and mechanical design—are at your service. We can supply a *preliminary engineering analysis* of your low-temperature possibilities . . . or a *complete process design*. Engineering rates are reasonable. Outline your problem to us (your inquiry will incur no obligation), or write on company letterhead for NEW 36-page BROCHURE. *Air Products, Inc., Dept. J, Box 538, Allentown, Pa.*

Air Products

INCORPORATED

Specialists in Low-Temperature Processing

Estimates • Process Design • Apparatus Design • Apparatus Manufacture

• **Manufacturers**

• **Mixers**

• **Chemists**

NEED MINERALS?



Just state the combination of mineral mixtures you want . . . state the specifications . . . and the quantity, large or small. As one of the country's largest basic producers of soluble mineral salts and agricultural chemicals, we can supply most any need.

SOLUBLE TRACE MINERALS

Tennessee's trace minerals are soluble and their nutritional value is immediately available to the plant. Soluble trace minerals are more economical and faster acting.

Highest quality liquid Sulphur-Dioxide can be supplied in—

SULPHUR-DIOXIDE
SO₂

- Cylinders
- Ten Drums
- Tank Trucks
- Tank Cars

For detailed information, phone, wire or write—



TENNESSEE CORPORATION

617-29 Grant Bldg., Atlanta, Georgia

SPECIALTIES.

Carter charges, chemist Fine packed up at Snell and went to work for Colgate—and very soon began unpacking his knowledge of aerosol shave creams. (Reich, by the way, eventually joined Lever Bros.)

Then, in Jan., '52, Colgate began making its "new discovery," Colgate Rapid Shave, and sold it through Read, as well as others. It applied for patents in several countries, was even granted one in South Africa.

Even more galling, it appears, was the way Colgate made use of the information it now had. Carter charges it revealed trade secrets on the product to Noxzema, and the Mennen Co. (Stalfort fills for Mennen), permitting them to make the shave preparation, too.

To rectify matters, Carter asks the court to:

- Stop Colgate from disclosing trade secrets to other firms.
- Grant an injunction to stop misrepresentation in advertising by Colgate.
- Award damages, no amount given, for infringement of patent.

So far, Colgate's principal counter-move (it is apparently doing most of the work for all the defendants) has been to seek pretrial depositions of the inventors and Carter officials. Judge William C. Coleman has permitted Colgate to do its quizzing

first; Fine is to be questioned after Colgate is through.

There will be plenty of interest Jan. 2 when the trial begins. Carter has picked a strong opponent in Colgate, and there promises to be a tough battle. In any case, it will crack the curtain on a product about which Carter has maintained a stern silence for several years.

Plantroots Chemistry

Better soil, better crops, and bigger crops—they all get a hand from chemistry. Some of the new ways in which chemistry helps were set forth at the Dallas, Tex., meeting of the American Society of Agronomy last fortnight.

Low cost treatment of soils with surface active agents, to improve their "wettability," was one of the most novel ideas. Atlantic Refining Co. told how its PR-51 improves soil drainage and boosts moisture absorption by its wetting action. Growing tests also show that PR-51 permits earlier plowing of "heavy" soils; and it speeds germination by producing a dry, fast-warming top soil and promoting rapid absorption of water by seeds.

Atlantic, which has been working on PR-51 for some time (CW, Dec. 13, '52), doesn't regard its petrochemical baby as a soil conditioner, because it doesn't alter soil structure.



Rubber Tar for Airplane Roost

NEW PARKING STRIP being laid down at New York's International Airport makes use of a novel rubber and tar paving mixture. The surface is said to be resistant to spilled fuel, and to prevent seepage of water into lower

pavement levels. Naugatuck Chemical Div., U.S. Rubber Co., supplied the material, Surfa-Aero-Sealz, which is produced from plasticized synthetic rubber and tar. This is the first nonmilitary application of the compound.

Make your pails please your customers



Screw Nozzles

Reversible
Spout
Assemblies

Tri-Sure* Container Closures prevent losses and build good will—because they *protect* your product, and make your containers easy to use and *re-use*. Tri-Sure Container Closures offer you a line of Screw Caps, Nozzles, Spouts and Assemblies that meet every requirement for the efficient handling of containers.

Specify Tri-Sure Container Closures on every order for shipping containers. They will help your selling—as well as your packaging. For details on the complete Tri-Sure line, write to us.

Tri-Sure Container Closures comply with I. C. C. and C. R. C. specifications

AMERICAN FLANGE & MANUFACTURING CO. INC.
30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.

Tri-Sure Products Limited, St. Catharines, Ontario, Can.

*The Tri-Sure Trademark is a mark of reliability backed by over 30 years serving industry.



Spout
Assemblies



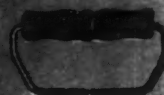
Tru-Pour
Collapsible Spouts



Utility Can
Closures



Cap
Wrenches



Handles

PERCHLORETHYLENE



Stauffer Perchlorethylene, the non-flammable, non-explosive solvent, will soon be available from the new plant at Louisville, Ky. As a supplier of industrial chemicals during the past 68 years, Stauffer is familiar with the requirements of Perchlorethylene users and has sufficient capacity to adequately serve the industry.

The new Stauffer Perchlorethylene plant, using the last word in modern equipment will soon be on stream. Stauffer Perchlorethylene is manufactured in various grades to meet the specifications established by users.

Stauffer's 43 plants, coast-to-coast, are your guarantee of "know-how" and dependability in the manufacture of chemicals and solvents for industry. From the Stauffer Chemical Company at 420 Lexington Ave., N. Y., 221 N. LaSalle St., Chicago, Ill., 636 California St., San Francisco, Calif., and all other sales offices in major consuming centers you can be assured of intelligent service and prompt delivery. For complete satisfaction, look for the distinctive blue-striped drum.

BY STAUFFER



WITH WORLD

Dark Corner Drugstore

BLACK MARKET in toothpaste, shoe polish, and other specialties booms in Tokyo. Authorities report that prevalence of *sub rosa* selling is far greater than during the last war, and may run as much as \$50 million/year. Liquor, cigarettes, and American dollars rate as top items, but American drugs and

cosmetics aren't too far behind. The stall in the photo is on a sidestreet in downtown Tokyo and is stocked with hard-to-get products the Japanese want. Much of the supply comes from American soldiers, who sell material they have purchased cheaply at post exchanges. Shops of this sort seem to thrive unchecked.

Nor is it a permanent treatment, for it can sometimes be leached out of the soil within a year. Nonetheless, the firm points to increased yields and low application costs—15-50 lbs./acre at roughly 50¢/lb.—and says some tests indicate that plants grown in treated soil take in more-than-average amounts of nutrients from the growing medium.

Wash and Wind: Soil conditioners, however, did come in for some comment. Agronomists reported that hydrolyzed polyacrylonitrile and vinyl acetate-maleic anhydride compounds reduce water erosion, but do not lower—in most cases they increase—wind erosion.

Too, soil conditioners can affect assimilation of soil nutrients. Greenhouse experiments indicate that, as a generalization, addition of a soil conditioner decreases calcium and magnesium uptake by red clover and millet, and increases the uptake of potassium and sodium. Hydrolyzed polyacrylonitrile, one agronomist noted, applied with alfalfa residues, increases the ability of soil to make available nitrogen. With straw, or alone, it produces no great effect on the nitrogen production.

Availability of soil nutrients was one of the major topics. In the South-

east, for example, agronomists find that as much as 90% of fertilizer phosphates added to the soil are tied up, made unavailable, by components in the earth.

Hay Help: Two areas where the chemist might help the hay grower were discussed too. One prospect is fairly bright: treating hay to prevent mould growth. Cornell University agriculturalists showed that 2,4,6-trichlorophenol, sprayed on hay before raking, lowers storage losses. The hay is safe and palatable to dairy cattle—but cost and residue problems demand more research.

Not so bright, three other Cornell men said, are the possibilities of using herbicides to speed hay curing. Cost and indifferent results are the drawbacks.

From Brookhaven National Laboratories came word of work in making oats disease-resistant. On a lab scale, a variety of oat seed was exposed for up to eight hours of thermal neutron bombardment, grew up to a plant that withstood oat rust.

The variety of these chemical applications to farming—from soil conditioners to neutron-produced seed mutations—indicates the broadening role chemistry will henceforth play in feeding the world.

**For BAKING, CURING,
DEHYDRATING, etc.**

**on an efficient,
production line level**



**An oven
in days—
not months**

CHROMALOX *Electric* RADIANT PANELS

Ready to install, 1-ft. x 4-ft. and 2-ft. x 4-ft. pre-engineered Chromalox Panels generate intense, far-infrared energy to meet many processing and finishing heat needs. Tunnels in sizes to fit the work, can be quickly assembled in minimum space. Color-blind far-infrared radiation is absorbed efficiently by all colors and textures, can be controlled precisely, and gives other advantages possible with no other heat source!

**Send For
Bulletin CS-605**



It gives details on pre-engineered Chromalox Electric Radiant Panels and shows how they meet your heat requirements.

Radiant Heating Division		18-35-A
EDWIN L. WIEGAND COMPANY		
7557 Thomas Blvd., Pittsburgh 8, Pa.		
I am interested in Chromalox Radiant Heat for _____		
<input type="checkbox"/> Send me Bulletin CS-605 on Radiant Heaters. <input type="checkbox"/> Have your Chromalox representative contact me. <input type="checkbox"/> Send me Catalog 50 which shows other Chromalox Units.		
Name _____		Title _____
Company _____		
Street _____		
City _____	Zone _____	State _____

CHROMALOX
THE BEST IN ELECTRIC HEAT



AMSCO

specializes in

SOLVENTS

Our specialization can mean this to you: the right solvent, at the right place, at the right time. When the problem calls for solvents, call on AMSCO!

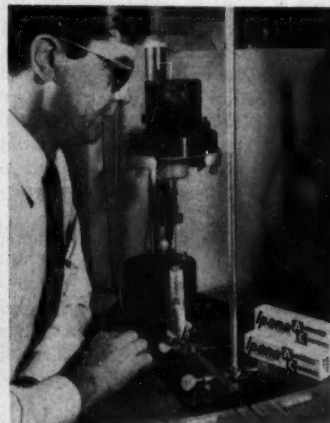
AMERICAN MINERAL SPIRITS COMPANY
 230 N. Michigan Ave., Chicago 1, Ill. • 155 E. 44th St., New York 17, N. Y.
 8400 S. Garfield Ave., South Gate, Los Angeles, Cal.

SPECIALTIES.

Improved Sequestrants: Refined Products Corp. (Lyndhurst, N. J.) has developed a new type of organic sequestrants. Called Perma Kleers, they are superior, the company says, to EDTA (ethylenediamine tetra-acetic acid) in that they possess greater solubility, greater chelation of ferric ion, and greater efficiency in sequestering calcium and divalent metals. Chemically, they are stable salts of poly-amino carboxylic acids. A free booklet on their application can be obtained on request to the firm.

Georgia Fair Trade: Early this year Georgia's Supreme Court ruled that state's "fair trade" law was unconstitutional, thereby scratched Georgia from the list of states with minimum price contract laws. But the situation has been changed; last week the State Senate passed a new "fair trade" law.

Smug about Smog: Firestone Rubber Co. capitalized on the recent attention paid smog, smaze and smoke. The firm claims to be incorporating a special component in its passenger tires to prevent damage by fumes. The additive is said to provide a film-like coating over the sidewall.



Flowability Check

SO YOU won't need both hands to squeeze out a shot of new Ipana toothpaste, technicians at the Bristol-Myers laboratories in Hillside, N.J., run frequent viscosity checks on the dentifrice. Part of the brand-new testing equipment is a Synchro-Lectric viscometer, made by Brookfield Engineering Labs, Stoughton, Mass.

BECCO[®] BRIEFS

PEROXYGEN CHEMICALS

The properties of Becco Peroxygen chemicals, and their current and potential uses, are described in a large number of detailed and authoritative bulletins. Send for your copy of Becco's Bulletin List.

Becco Peroxygen products include Hydrogen Peroxide, Peracetic Acid, Sodium Carbonate Peroxide, Sodium Pyrophosphate Peroxide, Urea Peroxide, Calcium Peroxide, Magnesium Peroxide, Zinc Peroxide, Potassium Persulfate, Ammonium Persulfate, Acetyl Peroxide, Sodium Perborate.

Buffalo Electro-Chemical Company, Inc.
DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION



Sales Agent: BECCO SALES CORPORATION, Station B, Buffalo 7, N.Y.
Buffalo • Boston • Charlotte • Chicago
New York • Philadelphia • Vancouver, Wash.

Please send me the Becco Bulletin List from which we may select bulletins of interest to us.

Name _____
Company _____
Street _____ Zone _____ State _____
City _____

TRIETHYL ORTHOFORMATE is a unique ester, closely resembling an acetal, stable in the presence of alkali, unstable in the presence of acid, and a source for the ethoxy methylene group. — Potentially valuable in new fields, this compound is now an intermediate for B-complex vitamins, anti-malarials, special polymers and polymethine dyes.

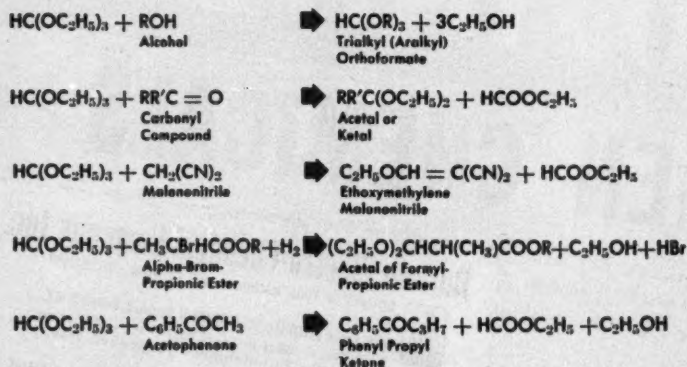
triethyl orthoformate



KAY-FRIES SPECIFICATIONS...

purity	● 99.0% minimum
specific gravity	● .892 — .896 at 20°/20° C.
color	● Maximum 15 Hazen Scale

Typical reactions of TRIETHYL ORTHOFORMATE



TECHNICAL BULLETIN AVAILABLE

American-British Chemical Supplies, Inc.

Selling Agents For

KAY-FRIES CHEMICALS, INC.

180 Madison Avenue, New York 16, N. Y.

Murray Hill 6-0661



SPECIALTIES.

Over the Rockies: J. I. Holcomb Mfg. Co., Indianapolis, is planning to build a \$250,000 plant in Los Angeles to manufacture cleaning chemicals, waxes, and industrial brushes.

Ion Swap: Ion exchange resins pre-processed to make them suitable for chemical, medical, and physical laboratory applications are now offered by Bio-Rad Laboratories (Berkeley, Calif.). The firm purifies Dowex resins, provides an analysis for each batch covering moisture, cross-linkage, capacity, size distribution, and porosity. Bio-Rad will "custom-tailor" resin for specific purposes.

"Housewives'" Eczema: Widespread use of detergents has caused a rise in the incidence of eczema of the hands among housewives. This was brought out at the recent annual meeting of the Southern Medical Assn. in Atlanta, Ga. Recommended treatment: soaking the hands for 15 minutes 3 or 4 times a day in a solution of aluminum acetate, 1 dram/qt. of hot water.

Sales Rise: Sales of soaps and detergents in pounds for the third quarter this year were 21% above the preceding quarter and 10% above the same quarter last year, according to the Assn. of American Soap & Glycerine Producers, Inc. The association says sales of 91 manufacturers for the first nine months totaled some 2,684,243,000 lbs. In the same period in 1952 the figure was 2,576,196,000 lbs.

Settler: A new drug aimed at giving 24-hour protection against motion sickness in a single dose is currently being offered by Pfizer Laboratories. Named Bonamine, it is *p*-chlorbenzhydryl-*m*-methylbenzyl-diethylene diamine dihydrochloride. According to Pfizer, it has proved its efficacy in tests conducted by U.S. Army, Navy and Air Force doctors.

New Dosage Form: Upjohn Co. now markets a new dosage form of penicillin that makes it possible to maintain prolonged (8-hour) blood levels of the antibiotic in patients. The form is called Pen-G-Cap, offers 200,000 units of penicillin G suspended in oil, comes in a gelatin capsule.

Two Channel Blacks: Godfrey L. Cabot, Inc. (Boston, Mass.), is producing two new nonpremium ink and color grades of channel black, Elf 75 and Elf 75 Densad. The latter, because of its density, is relatively cheap to ship and also requires little warehouse storage space.

Advance Info



Published by **ADVANCE SOLVENTS & CHEMICAL CORP.**

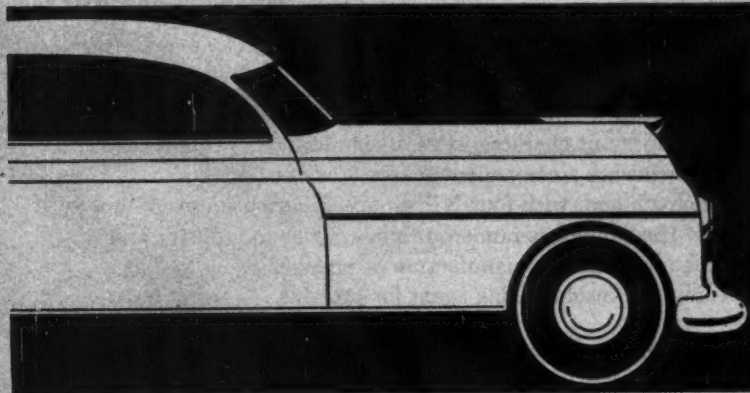
ECONOMICAL ZIRCONIUM DRIER CATALYST OFFERS DRYING ADVANTAGES

ZIRCONIUM DRIER CATALYST effectively replaces **COBALT** and other **DRIERS** in paints and enamels at *reduced costs*.

Widespread Acceptance

Industry-wide acceptance of Advance Zirco Drier Catalyst 6% has confirmed numerous laboratory tests performed by the research chemists of Advance Solvents & Chemical Corporation as to the real value of this **ZIRCONIUM** complex as a drying aid.

ZIRCO ASSURES BETTER COLOR UNIFORMITY



Better Color Retention

ZIRCO has proven of real importance in force dry finishes where the critical need is for uniformity, especially where various coated parts are baked in different ovens. (Shows least change of color even after re-baking and after spotting.) The advantages resulting from the use of **ZIRCO** in drier combinations are better gloss, freedom from discoloration (something which is difficult to

Drier Replacement

While not a drier itself, **ZIRCO** has a synergistic action on other driers and enhances their activity. By replacing part of such primary drier metals as Cobalt and Manganese with **ZIRCO**, equal drying time, better through dry, far superior hardness without embrittlement, better color and a reduction in drier adsorption has been obtained.

When used with primary driers, **ZIRCO** acts as a primary drier itself. Secondary driers on the other hand, such as Lead, can be totally replaced by **ZIRCO**.

match with other drying systems), "whiter" white coatings, less tendencies to wrinkling and improved adhesion, flexibility and shock resistance.

Tests recently concluded of white and light colored alkyd baking finish enamels, utilizing **ZIRCO**-Cobalt combinations in some and **ZIRCO**-Manganese in others, produced better hardness and less discoloration than the usual Cobalt-Manganese and Lead combinations.

CASE HISTORIES

- In a white alkyd melamine roller coating enamel, the use of **ZIRCO** with *Advance Rare Earth Catalysts* and minute amounts of Manganese drier gave improved hardness, whiteness, gloss and flexibility.
- In an air dry alkyd type enamel where tack-free time with a lead drier system could not be obtained overnight, a **ZIRCO**-Cobalt-Manganese combination in a 7:5:3 ratio gave excellent dust-free time, a much improved tack-free time and excellent overnight hardness.
- In another case where it was impossible to get a satisfactory dry in 30 hours (in an air dry, long oil alkyd enamel), equal parts of **ZIRCO** and Advance Hexogen Cobalt gave dust-free time of 5½ hours and tack-free time of 22 hours.

While *Advance Soligen* and *Hexogen Rare Earth Catalysts* have always been regarded as superior driers for white baking enamels, the replacement by equal parts with **ZIRCO** in the Rare Earth formula produced even "whiter" whites.

ZIRCO Results Justify Formula Revisions

These are only a few of the many interesting results produced by the proper use of Advance **ZIRCO** Drier Catalyst 6%. We urge that **ZIRCO** be evaluated by all drier users because of its present widespread use and particularly because of its much lower cost over the Cobalt driers it so effectively replaces.

ADVANCE SOLVENTS & CHEMICAL CORP. 245 Fifth Avenue, New York 16, N.Y.

Fungicides

Wetting Agents

Stabilizers

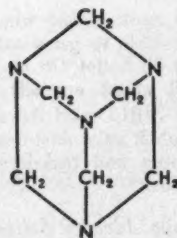
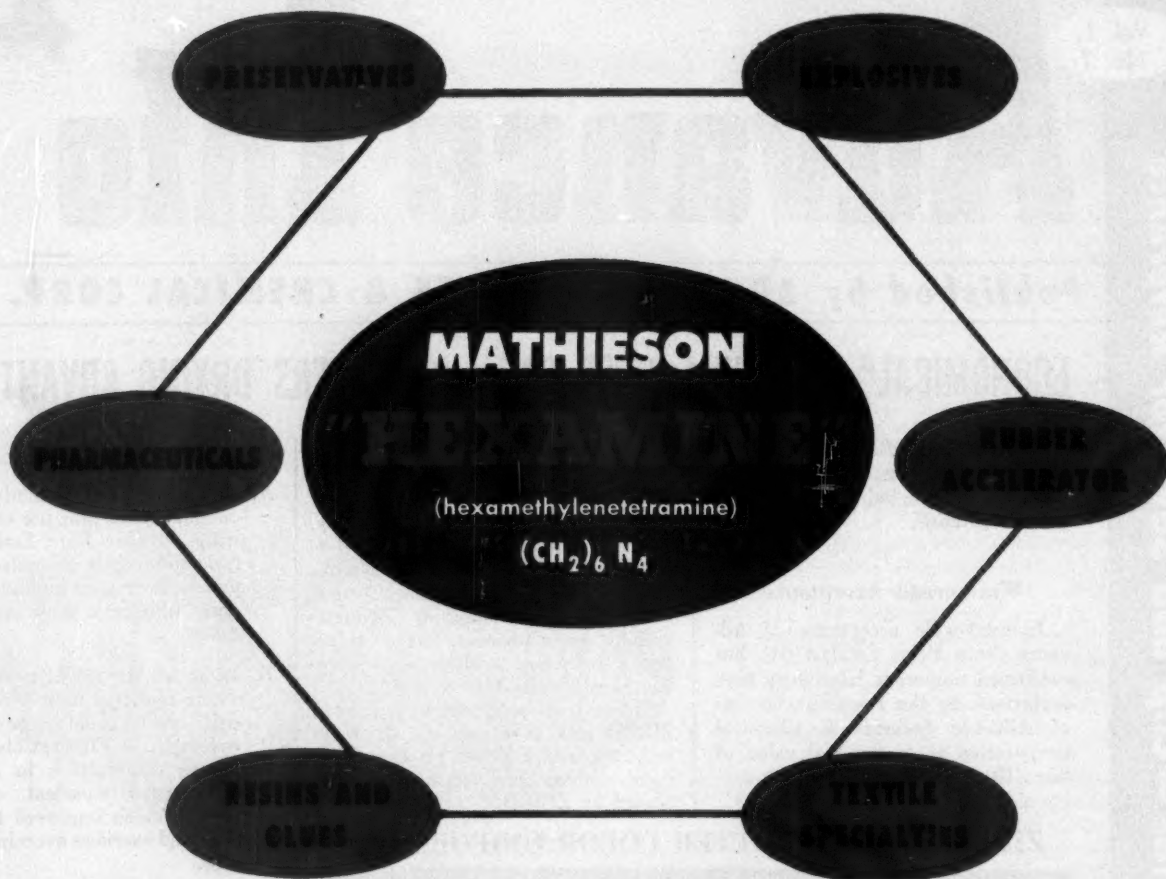
Plasticizers

Driers

Catalysts, Promoters

Paint Additives

Vistac



As a chemical intermediate, hexamine (hexamethylenetetramine) has two important characteristics of significance to commercial users: it furnishes a convenient source of water-free formaldehyde and, with four $\text{N}\equiv$ groups, is a rich source of amino activity. Hexamine has numerous applications in industry and medicine including the manufacture of phenolic resins and as a hardening and insolubilizing agent for proteins.

Mathieson Hexamine is available in carload quantities from the Morgantown plant; it is packaged in moisture-resistant drums and bags. For further information, data sheets, and samples, please write on company letterhead.



MATHIESON CHEMICAL CORPORATION

Mathieson Hydrocarbon Chemicals Division
Baltimore 3, Maryland

Ethylene Glycol • Diethylene Glycol • Triethylene Glycol • Ethylene Oxide • Dichloroethylether • Ethylene Dichloride • Methanol • Sodium Methylate • Hydrazine Products • Chlorobenzenes • Ethylene Diamine

DISTRIBUTION

Distribution Services

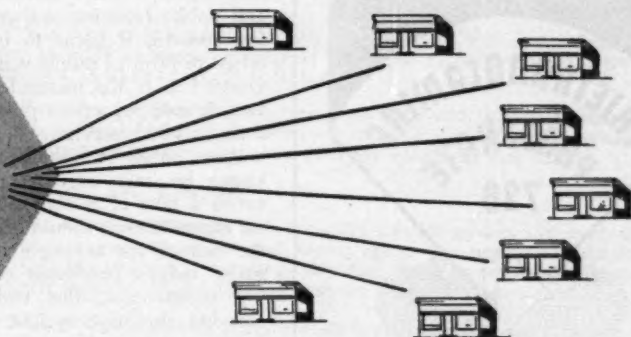
(Story on Page 60)



1—SHIPPING "L. C. L."

(LESS CARLOAD)
FROM PRODUCER
TO CONSUMER

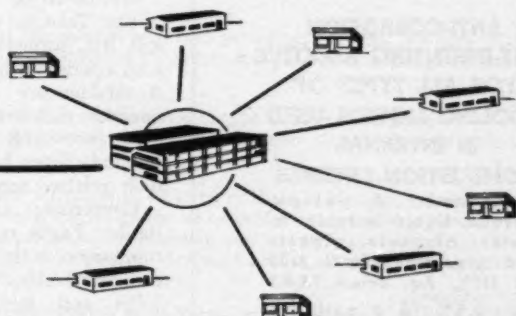
IS EXPENSIVE—WASTES TIME—
DELAYS SERVICE



2—SHIPPING IN CARLOADS TO A CENTRAL POINT—

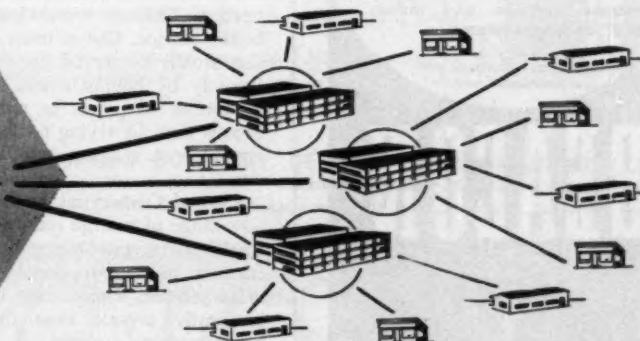
SAVES TIME—LOWERS
FREIGHT CHARGES

Quick spot stock service gives safe
and scientific distribution



3—WIDESPREAD USE OF PUBLIC MERCHANDISE WAREHOUSES

TO SECURE MOST
DIRECT AND SCIENTIFIC
SCHEME OF DISTRIBUTION



Courtesy: American Warehousemen's Association.

AMERICAN WAREHOUSEMEN'S ASSN. SALES PITCH: A little public warehousing (No. 2) is a good thing, a lot (No. 3) is even better.

BEACON HELPS YOU
FIGHT RUST WITH
THIS EFFECTIVE

rust INHIBITOR for ANTI-FREEZES



(Meets Gov't. Specifications)

**ANTI-CORROSION
RUST-INHIBITING ADDITIVE
FOR ALL TYPES OF
COOLING LIQUIDS USED
IN INTERNAL**

COMBUSTION ENGINES

Characteristics: A yellow viscous liquid soluble in water, alcohols, glycols and glycerine. Sp.G. 1.30 pH (10% Aq. Soln.) 7.9-8.3

Use: 2.5% in a suitable cooling liquid will inhibit the formation of rust in airplane, automobile, marine engines and industrial cooling systems.

Write today on your company letterhead for experimental sample

BEACON



*Chemical
Industries, Inc.*
BOSTON 40, MASSACHUSETTS

DISTRIBUTION.

Order in the Warehouse

In the scramble for tomorrow's markets, the pressures of higher output and lower profit margins are forcing producers to reexamine their channels of distribution. One field of investigation receiving ever-increasing notice is methods of warehousing.

Right now, one of the larger chemical companies is busily trimming down its private warehousing system in favor of public warehousing. A short time ago, its storage capacity was almost equally divided between its own and public facilities; within the next few months, it plans to convert to 80:20 in favor of public warehousing. Queried as to the reason for this action, it wrapped up its philosophy in a single word: service.

Any public warehouseman who knows his sales arguments can advance a host of reasons why chemical manufacturers should be following the suit of the company cited. But under today's conditions of tightening competition, the verbal blow carrying the most weight of all is "getting the goods to the customer when he wants it."

Service is, of course, no respecter of size. Take the case of Eagle Chemical, Inc., formerly of Joliet, Ill., now with operations based at Mobile, Ala. A medium-size company, with nationwide distribution, Eagle has had experience with both its own and public facilities, had occasion to weigh their relative service values.

Concerning this point, Frank Rauhe, Eagle executive, related his company's actions. "Formerly," recounted Rauhe, "we had our plant in Joliet and serviced Chicago and Midwest customers direct from there."

"Now, however, manufacturing operations have moved to Mobile—so we need a Chicago warehouse to give better service. Out-of-town customers can usually be served faster, more efficiently by having stocks spotted at a number of points in public warehouses than by trying to handle business out of a lesser number of our own."

Cost of Customers: Aside from the advantage of a large number of "spot stock" points, public warehousing, according to its proponents, provides more efficient and—in the long run—less-costly service than the branch house system.

A spokesman for the American Warehousemen's Assn. opines that manufacturers are trying to reduce branch house costs by five different methods:

- Reducing branch house personnel. This results, according to AWA (and conceded by some industry experts) in: (a) poorer service to customers; (b) conversion of the sales manager into part clerk, part warehouseman.

- Reducing amount of stock carried. This again reduces service and defeats the very purpose of branches.

- Splitting the stock-carrying branch into two components: a sales office, and a public warehouse in the same town.

- Abandoning branch sales offices entirely and placing stocks in public warehouses under the accredited list system.

- Leasing a definite space, on a square-foot basis. (This differs from placing goods under the accredited list system, in which storage is usually handled on a package basis.) In paying for space rental in a public warehouse the charge covers only the net space used. In addition, the tenant obtains (a) advantages of transportation and handling services; (b) benefit of lower insurance rates than if stored on his own premises.

Obviously, with customer-service demands increasing in the face of rising cost of distribution, AWA believes it presents a strong case in its favor.

Its claims for public warehousing:

- A class of service that few manufacturers are in position to provide for themselves.

- The manufacturer need not enter into long-term leases or purchase storage and branch house properties.

- Flexibility of expansion or contraction of space impossible for private warehouses.

- No preliminary work is required in establishing branch stocks.

Eagle Chemical delved into the relative costs, arrived at two separate solutions. "We own our own warehouses in Philadelphia and California," admits Rauhe. "But in most cases maintenance costs are too high, especially if volume isn't very big."

"You can't rent a warehouse, hire a warehouseman, provide labeling equipment, etc. for less than \$600/month," Rauhe concedes that under conditions of high, steady volume it might be economical to run one's private warehouse. But unless a producer can keep his storage facilities close to full most of the time, he would do well to check his cost of operations.

Labor Factor: The public ware-



You can't keep a good man from coming out on top. And a fellow is never so likely to succeed, insofar as flattening of varnishes and lacquers is concerned, as when he specifies "Metasap".*

For Metasap Stearates, resulting from long and deliberate study of varnish and lacquer flattening problems, are *precisely formulated* metallic soaps which assure the flat, clear, marproof films that consumers look for.

We especially recommend:

METASAP ALUMINUM STEARATE V—a decidedly superior product with every important property for an ideal flattening agent—low washed ash content, high free stearic acid, correct particle size, high gel temperature. The thin gels normally obtained permit *optimum degree of dispersion*.

METASAP XX—an aluminum stearate which is extremely resistant to gelling in ordinary lacquer solvents and thinners. A very fine powder, this soap stays in suspension and gives excellent flattening without diminishing the clarity of the film.

METASAP 576—a zinc stearate with high gel temperature that is a very efficient flattening agent. Especially recommended when a denser type of stearate is desired.

METALLAC*—Metasap's special grade of zinc stearate. Characterized by minimum gelling tendencies and flattening properties equal to those of aluminum stearate.

This lists but a fraction of what we produce at Metasap, for we not only provide tailor-made specialties for many industries, but offer a *complete line* of stearates and palmitates of aluminum, zinc, calcium, and magnesium. Manufacturers in many fields rely on Metasap Chemicals to help them achieve the quality products they desire.

We have representation in 44 States and distribution facilities across the nation. Metasap service, in fact, is "at your elbow" — ready to serve you wherever you telephone, wire, or write. Our Technical Service Division is prepared to work closely with you, right in your plant.

Send for our informative, free book: *Metallic Soaps for Research and Industry*.



*Reg. U. S. Pat. Off.

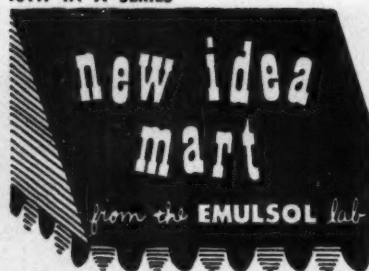


METASAP CHEMICAL COMPANY, DEPARTMENT 10, HARRISON, N. J.
BRANCHES: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF.

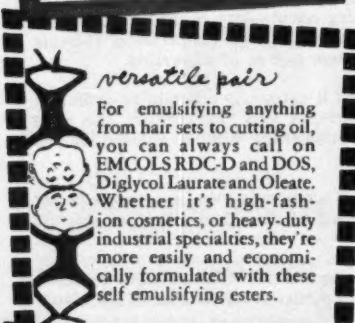
Stocks at Cleveland and Akron, Ohio; Los Angeles and San Francisco, Calif.; Louisville, Kentucky

Stearates

of Calcium • Aluminum • Lead • Magnesium • Zinc



A thought or two about things new and interesting in the field of surface-active chemistry . . .



YOUR PROBLEM IS NEXT . . .

If you've a production headache that might respond to the proper surfactant, sit down and give us the details on your letterhead. We may have the answer sitting "in stock" . . . or perhaps we'll be able to invent it for you. Write Department CW.



DISTRIBUTION.

housemen believe that in at least two respects, trends in labor movement tend to favor them. In particular, they cite:

- Union regulations leading to a duplication of forces, higher costs. Example: many warehouse operations, such as labeling, could be accomplished with one man; union rules require a second operator.

- Growing agitation in labor ranks for a guaranteed wage. Should this movement advance in the chemical industry, it could lead to more uniform output throughout the year. In the case of seasonal items, this could lead to considerable inventory pile-ups, a condition probably best handled through public warehousing, with its relative flexibility of operations.

Anything Goes: Warehousemen and many chemical producers agree that there are few, if any, materials that the public warehouse cannot handle.

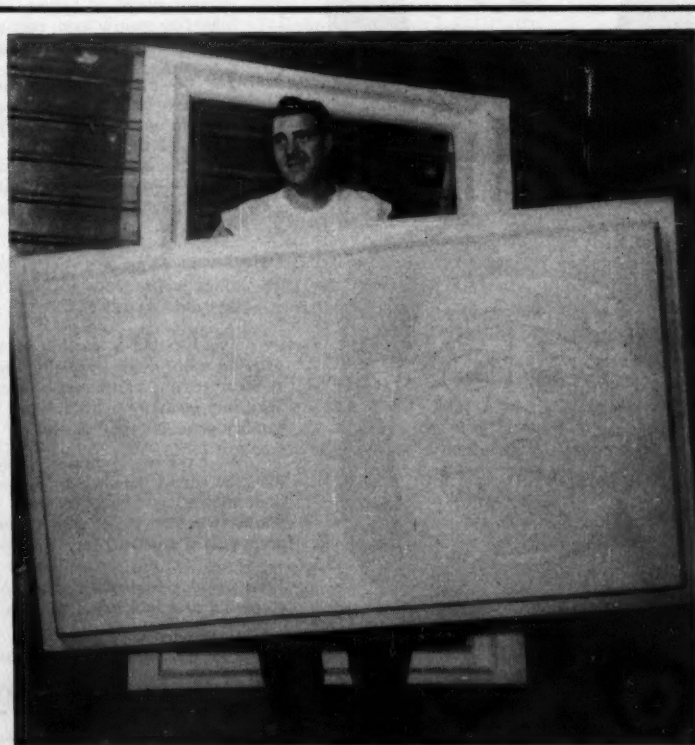
A quick check by **CHEMICAL WEEK** revealed a great diversity of products. Some of these: essential oils, aromatics, resins, pigments, acids, alkalis, cleaning compounds, solvents, antifreeze.

And in some instances, the producer is only too willing to turn his material over to the public facility. Prime example: many public warehouses are better equipped and more experienced for storage and handling of flammable chemicals.

Clinchers? Over the coming period, with costs of distribution receiving ever closer scrutiny, the public warehousemen believe their setups may neatly fit into the plans of more producers. Their particular arguments:

- State personal property taxes vary widely both in rate and in degree of enforcement. Proper location of stocks can often effect considerable tax savings.

- Under the more usual arrange-



No-Freeze Freezer Door

PLASTIC DOOR for refrigerated trucks is the latest use for reinforced resins. Made from Fiberglas and Vibrin, a polyester resin produced by U. S. Rubber's Naugatuck Chemical Div., the door, complete with hardware and aluminum

facing, weighs less than one-half the conventional metal and wood refrigerator door. Claimed advantages: will not freeze when closed, will not rot, absorb odors, warp or dent. Door-frame is of similar construction.



**STEP FORWARD . . .
Your Customers Are!**

**Companies in most major
industries have adopted
Unbreakable Plaxpak® Carboys**

Yes, your customers are using seamless Plaxpak carboys for inter- and intra-plant operations. And the reports are glowing. Age-old breakage problems have been eliminated. Corrosives are handled and poured with new ease, safety and efficiency. Product purity is protected. Carboy replace-

ment costs have dropped practically to zero.

Think what it would mean to your customers to get your product packaged in the money-saving Plaxpak carboy. More sales? Sure. Big savings for you in sharply reduced shipping costs. Get the full story about this ICC-approved carboy and its

many advantages to you. Ask to see one of our representatives or write for our quick-reading brochure.

PLAX CORPORATION

672 FARMINGTON AVENUE
WEST HARTFORD, CONN.
Plax Canada, Limited, Toronto
In Canada:



PLAXPAK CARBOYS . . . the safe, saving way to handle bulk liquids

GLYCOL ESTERS

Emulsifiers

Ethylene, diethylene and propylene glycol fatty esters emulsify toilet goods, textile oils, paints, polishes, agricultural sprays. Also act as antifoams in paper mills.

Lubricants

For working brass (up to 0.02 gauge), aluminum, nickel alloys, tin; lubricating rubber and vinyls. Also plasticizers for film-forming materials, paper.

Thickeners

Disperse easily in hot water, giving viscous fluids or pastes. Replace vegetable gums in many cases. Stabilize and thicken fluid cosmetic emulsions, detergent cream shampoos.

In addition to a complete line of nonionic esters, Glyco is now producing the Tetrines—ethylenediamine tetraacetic acid and salts—for controlling di- and tri-valent metallic ion contaminants in processes using water.

The Tetrines, organic chelating, sequestering and complexing agents, have wide application in the agricultural, cosmetic, detergent, latex, leather, pulp and paper, and textile industries, among others.

Send for our catalogs "The Tetrines," and "Esters by Glyco."



GLYCO PRODUCTS CO., INC.

26T Court Street

Brooklyn 1, New York

DISTRIBUTION.

ment, storage and handling rates are quoted by the unit or by the package. Because few private warehouse or storeroom costs can be figured and allocated accurately, a producer who uses public facilities enjoys the advantage of knowing exactly what his distribution is costing him.

• Savings in freight rates often accrue, either from (1) the spread between carload and less-than-carload rates, or (2) the spread between through freight rates and the combination of two or more local rates.

Whether it's a question of improving service, assuming handling headaches, or achieving savings, members of AWA are confident that more and more producers, confronted with these problems, will soon be seeing his nearest warehousemen.

• **Synthetic Aliphatic Derivatives:** Humphrey-Wilkinson, Inc., North Haven, Conn., will double its manufacturing capacity before the end of the present year. Products involved: olefins, alcohols, ethers, mercaptans, chlorides and alkenyl succinic anhydrides.

• **Phenolic Molding Compounds:** Durez Plastics & Chemicals, Inc., N. Tonawanda, N.Y., will build a plant at Kenton, O., to manufacture phenolic molding compounds.

• **Exclusive:** A newcomer in the plastics field is Bradley Container Corp. of Maynard, Mass. It's headed by Bradley Dewey, who retired last year as president of Dewey and Almy Chemical Co. He says that it will make and market plastic tubes and bottles made by a recently developed European process for which the company has exclusive U.S. and Canadian patent rights. The company has leased 150,000 sq. ft. of floor space in Maynard, expects to employ 300 persons within a year.

• **Enamel Calculator:** Reilly Tar & Chemical Corp. (Indianapolis, Ind.), is distributing a coal-tar-base pipe enamel quantity calculator. Besides giving estimates on quantities of enamel required in pounds per 1,000 ft. and gallons per mile of pipe on two grades of primer, the calculator lists recommended temperatures of application and estimates for drying time.

• **Name Change:** Shell Chemical Corp. is changing the name of its Julius Hyman & Co. Div. to the Agricultural Chemicals Div., effective Jan. 1. Shell indicates that the change applies only to the sales organization. The plant in Denver, Colo., continues to be operated by Julius Hyman & Co.

REPRINTED FROM AN OFFICIAL ADVERTISEMENT PUBLISHED ON NOVEMBER 18, 1953

RUBBER PRODUCING FACILITIES DISPOSAL COMMISSION

Invitations for Proposals

Pursuant to the Rubber Producing Facilities Disposal Act of 1953 (P.L. 205, 83d Congress, 1st Session, approved August 7, 1953) the Rubber Producing Facilities Disposal Commission announces that it will receive written proposals for the purchase (or, in certain instances indicated below, the lease) of the properties and facilities described below, hereafter collectively referred to as "the rubber-producing facilities". Such proposals may be submitted at any time beginning November 25, 1953 through May 27, 1954, (unless extended by the Commission upon adequate notice) at the Office of the Commission, 811 Vermont Avenue, Washington 25, D. C. Detailed information concerning the form of proposals and the manner in which they are to be submitted may be obtained from the Secretary of the Commission upon request.

FACILITIES: The facilities offered for sale consist of 13 plants for the manufacture of butadiene-styrene type rubber (GR-S), 2 plants for the manufacture of butyl rubber (GR-I), 1 plant for the manufacture of styrene, 8 plants for the manufacture of butadiene, 1 plant for the manufacture of dodecyl

mercaptan, a fleet of 448 pressure tank cars (ICC Classification—ICC-104AW) and miscellaneous items of equipment.

The plants which are in operating condition and which are offered for sale as complete operating units are set forth in the following table.

These plants are operated for the account of the Reconstruction Finance Corporation as units in an integrated synthetic rubber industry. The 13 GR-S plants and the 2 GR-I plants are practically the exclusive domestic sources of these types of rubber. All of the butadiene consumed in the domestic manufacture of synthetic rubber is produced in the butadiene plants offered for sale or lease. The styrene plant produces a significant portion of the total requirements of the synthetic rubber program, the remainder being purchased from commercial sources. Dodecyl mercaptan is an ingredient of one type of GR-S, and the plant offered for sale produces the program's requirements for this chemical.

Detailed descriptive brochures relating to each of the plants may be obtained upon application to the Secretary of the Commission. Similarly, descriptive inventory of the miscellaneous facilities hereby offered for sale will be available.

Plancor No.	Present Operator	Location	Maximum Annual Capacity
BUTADIENE-STYRENE RUBBER (GR-S) PLANTS			
876	Copolymer Corp.	Baton Rouge, La.	49,000 LT
127	Firestone Tire & Rubber Co.	Akron, Ohio	30,000 LT
1056	Firestone Tire & Rubber Co.	Lake Charles, La.	99,600 LT
877	General Tire & Rubber Co.	Baytown, Texas	44,000 LT
983	B. F. Goodrich Co.	Port Neches, Texas	90,000 LT
980	B. F. Goodrich Co.	Institute, W. Va.	122,000 LT†
126	Goodyear Synthetic Rubber Corp.	Akron, Ohio	15,200 LT
956	Goodyear Synthetic Rubber Corp.	Houston, Texas	99,600 LT
1278	Kentucky Synthetic Rubber Corp.	Louisville, Ky.	44,000 LT
611	Midland Rubber Co.	Los Angeles, Calif.	89,000 LT
982	Phillips Chemical Co.	Borger, Texas	66,000 LT
129	U. S. Rubber Co.	Naugatuck, Conn.	22,200 LT
963A	U. S. Rubber Co.	Port Neches, Texas	89,400 LT
BUTYL RUBBER (GR-I) PLANTS			
1052	Humble Oil & Refining Co.	Baytown, Texas	43,000 LT
572	Esso Standard Oil Co.	Baton Rouge, La.	47,000 LT
BUTADIENE PLANTS—PETROLEUM			
706	Cities Service Refining Corp.	Lake Charles, La.	60,000 ST
152	Copolymer Corp.	Baton Rouge, La.	23,000 ST
485	Humble Oil & Refining Co.	Baytown, Texas	49,000 ST
933	Neches Butane Products Co.	Port Neches, Texas	197,000 ST
484	Phillips Chemical Co.	Borger, Texas	71,200 ST
1063	Sinclair Rubber, Inc.	Houston, Texas	78,000 ST
963	Shell Chemical Corp.	Los Angeles, Calif.	61,000 ST‡
1593	Standard Oil Co. of California	El Segundo, Calif.	
STYRENE PLANT			
929	Dow Chemical Co.	Los Angeles, Calif.	57,000 ST
OTHER FACILITIES			
543	U. S. Rubber Co.	Naugatuck, Conn.	

† This facility is now in stand-by.

‡ Represent a tandem operation whereby Standard Oil Co. of California's production of crude butadiene is transferred to Shell Chemical Corp. for purification along with Shell's crude production.

* This facility is erected upon land held under an assignable lease which expires on February 15, 1958, from Standard Oil Company of California; all other plants are erected on property owned in fee by the government.

In addition to the foregoing, there are offered for sale, or alternatively for lease, 2 plants for the manufacture of butadiene from alcohol, located respectively at Louisville, Kentucky, and Kobuta, Pennsylvania. The plant at Louisville, Kentucky, Plancor 1207, has been operated, and is now being maintained in stand-by, by Union Carbide and Carbon Corp. and has an annual capacity of 87,000 short tons. The plant at Kobuta, Pennsylvania, Plancor 483, has been operated, and is now being maintained in stand-by, by the Koppers Company, Inc., and has an annual capacity of 128,000 short tons. These are the only facilities of any sort offered for lease. The Commission will entertain proposals for the leasing of these plants promptly and in advance of consideration of disposal of the other facilities. Such leases may run for not less than 1 nor more than 3 years. Proposals for the purchase of these facilities will be received in the same manner as prescribed for the purchase of the other facilities.

The Rubber Producing Facilities Disposal Act of 1953 prescribes in detail, as well as generally, procedural and substantive standards pursuant to which the sale of these facilities by the Disposal Commission is to be effectuated. To facilitate compliance with these standards the Disposal Commission has prepared Instructions for the Submission of Proposals, which set forth the requirements of the Commission with respect to such proposals, and copies thereof will be available upon application to the Secretary of the Commission. Subject to the foregoing, the following additional information concerning the program of sale is announced:

CONTINUED OPERATION OF PLANTS: As a condition to sale, the Commission is required to be satisfied that the prospective purchaser actually intends to operate the facility or facilities for the purpose of manufacturing synthetic rubber or its component materials. The purchaser must also agree to comply with the terms of a "National Security Clause", having terms, conditions, restrictions and reservations which will assure the prompt availability of the facilities, or facilities of equivalent capacity, for the production of synthetic rubber and the component materials thereof for a period of 10 years from the date of the contract. In consonance with these requirements, while the Commission will entertain proposals for the acquisition of portions of the productive capacity of particular facilities, as further discussed in the Instructions for the Submission of Proposals, it will not entertain proposals for the

piece-meal acquisition of individual items of equipment except such items as are listed in the inventory of miscellaneous equipment referred to above.

FINANCING: Proposals for purchase shall provide for the payment of not less than 25% of the purchase price in cash, and the remainder may be financed by a first lien purchase money mortgage maturing in not more than 10 years and providing for periodic amortization (amortization in equal annual installments is not required). The interest rate upon the balance of the purchase price represented by the mortgage shall be 4% per annum.

Proposals for purchase shall be accompanied by a deposit of cash or United States Government bonds of face amount equal to 2½% per centum of the gross amount proposed to be paid but not exceeding \$250,000 for each facility; provided, however, that the deposit required in the case of a proposal for one of a number of facilities on an alternative basis shall be the same as would be required if such proposal were for only the facility for which the highest amount is proposed to be paid. Except in the case of purchasers, deposits shall be refunded without interest. In the case of purchasers, deposits made hereunder shall be applied without interest to the purchase price.

PROCEDURE SUBSEQUENT TO THE SUBMISSION OF PROPOSALS: During a period of 7 months (unless extended by the Commission upon adequate notice to those submitting proposals) following the termination of the period for the receipt of proposals, the Commission will negotiate for the sale of the facilities with those who have submitted proposals. In accordance with the terms of the Act, negotiations for the sale of each type of plant (i.e., GR-S, GR-I, Butadiene, et cetera) will be limited to those persons having submitted a proposal for the purchase of such a type plant. Such negotiations will be conducted with due regard to the several purposes of the Act that the disposal of the synthetic rubber producing facilities establish a free, competitive, synthetic rubber industry, afford small-business enterprises and other users, the opportunity to obtain a fair share of the end products of the facilities sold and at fair prices, be consistent with national security, and realize full fair value for the facility or facilities, taking into consideration the policy set forth in Section 2 of the Act.

For further information and details apply to FERRIS B. THOMAS, Secretary.

HOLMAN D. PETTIBONE,
LESLIE R. ROUNDS,
EVERETT R. COOK,
Commissioners

November 18, 1953

RUBBER PRODUCING FACILITIES DISPOSAL COMMISSION

811 Vermont Avenue, N.W.
Washington 25, D. C.



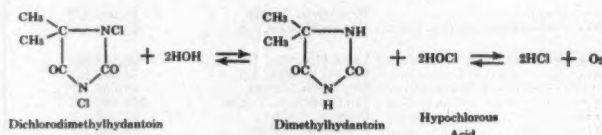
Development News

If you have set your sights on the dry bleach market, investigate Wyandotte's new HALANE, THE FIRST TRULY SAFE CHLORINE BLEACH

Extensive tests, both in the laboratory and in the field, have shown Wyandotte's new Halane to have outstanding promise in household-bleach applications. Its combination of bleaching effectiveness, excellent stability and proper physical form makes possible, for the first time, a safe, effective powdered bleach which can be profitably marketed regionally or nationally.

BLEACHING PROPERTIES

In solution, Wyandotte Halane releases hypochlorous acid with subsequent liberation of oxygen, as shown in the following equation:



Halane has the important advantage, however, of releasing its hypochlorous acid at a rate dependent on the bleaching conditions. This makes it possible to control the bleaching process and thereby attain more effective use of the available chlorine.

Halane can be formulated to be effective in the prewashing soak, the rinsing cycle or in the washing cycle. In solution, Halane is quite compatible with both synthetic detergents and soaps. Since it contains no calcium, there is no possibility of forming objectionable soap curds.

Halane also provides the usual sanitizing and disinfecting properties of chlorine bleaches.



Wyandotte CHEMICALS

Development Department 1253
Wyandotte Chemicals Corporation
Wyandotte, Michigan

Please send: ☐ Halane Brochures 1 ☐ 2 ☐ 3 ☐
☐ Free Sample of Halane

Name

Title

Firm

Address

City & Zone State

SAFETY FOR FABRICS

One of the outstanding advantages of Halane is its safety. For example, solid Halane can be added directly to the clothes in the washer with no damage resulting to the fabric, because the active hypochlorous acid is released at a controlled rate. Halane can be used on cotton, nylon, acetate and rayon.

Fabrics bleached with Halane show surprisingly small loss in tensile strength. Under normal bleaching conditions, this amounts to about one-quarter of the loss in strength caused by other chlorine bleaches. Under more vigorous conditions, the relative loss may be even less.

STABILITY

Halane has exhibited unusual storage stability. After 14 weeks in closed containers at 140°F, Halane lost only 1.5% of its available chlorine. In open containers at 104°F and 75% relative humidity, it lost only 8.4% of its available chlorine in one month.

Halane can be successfully compounded with the usual builders and diluents, except caustic, provided they contain no water of hydration. Even moderate amounts of properly selected surface-active agents can be incorporated.

By carefully controlling conditions, bleach formulations containing Halane can be spray-dried to an attractive, white, free-flowing bead form with only a small loss in chlorine content.

The exceptional stability of Halane also suggests its being packaged in convenient, cost-saving, cardboard containers.

AVAILABILITY & PRICES

Halane is now available in commercial quantities in 200-pound drums. Increased interest and sales volume have made possible a price reduction of 15 cents per pound in drum and truckload quantities.

New prices (f.o.b. Wyandotte, Michigan)

Less-than-drum	\$1.00 per lb.
Drum (200-lbs.)	.70 per lb.
Truckload	.65 per lb.

These new prices permit formulation of bleach with raw material costs as low as 11 cents per pound for 8% available chlorine.

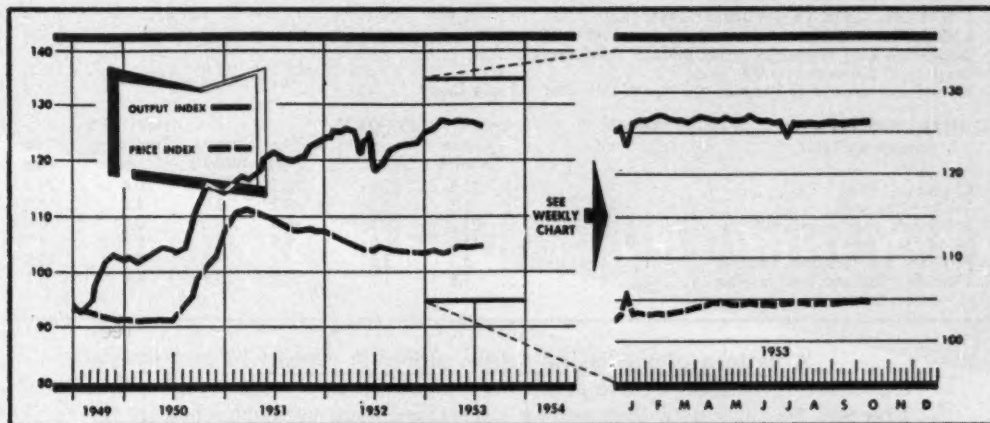
ADDITIONAL DATA

Further information on Halane is contained in the following brochures, which are available on request.

1. Physical Properties of Halane
2. Home Laundry Bleach Properties
3. "Household Bleaches Today and Tomorrow"

Fill in and mail coupon, today, for your free copies. Wyandotte Chemicals Corporation, Development Department, Wyandotte, Michigan.

MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
 CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

Not all chemical marketers are bemoaning the present easing in business. Indeed, many are convinced the slackening has a tolerable beneficial aspect. For example, some makers' attempts to gear chlorine output to demand have concomitantly tightened the caustic market.

That doesn't mean there's an over-all scarcity of electrolytic caustic, but it's a fact that occasional spot shortages have popped up in a few producing quarters. For the most part, though, stocks are ample for prompt—and near-future—requirements of customers.

And chlorine calls, while slowing, have not as yet reached a turtlish pace. The question shaping up in the caustic-chlorine arena, however, is this: If demand for the latter continues to be insufficient to fully blot production—limited chlorine storage facilities is the producer's bug-a-boo—will the ensuing overflow cause, in turn, a further cutback in caustic?

The answer may be forthcoming after the holidays; expected is a chlorine perk-up to resolve the situation.

Some benzol producers, too, are facing a slight inventory-building problem now, whereas just a short time ago they were shipping directly from production. The isolated soft spots in the market, however, aren't causing too much concern—yet.

A cutback in demand from rubber, insecticides, dyestuffs, other outlets, is behind the easier benzol supply position, but prices are firm; no price-altering is anticipated.

Incidentally, the long-awaited Business and Defense Services Administration's benzene end use pattern will probably be issued this month. BDSA officials are confident that general industry sanction of the release will be forthcoming despite objections from a few dissident consumers.

The Benzene Industry Advisory committee meeting—now scheduled for Dec. 14—should iron out the remaining obstacles surrounding that product's consumption data, pave the way for periodic issuance of similar patterns on a raft of other basic chemicals.

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	125.2	125.4	124.3
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.9	104.9	102.2
Bituminous Coal Production (daily average, 1,000 tons)	1,475.	1,546.	1,753.
Steel Ingot Production (1,000 tons)	1,956.0 (est.)	1,956.0 (act.)	2,180.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	261.9	255.0	257.8

MONTHLY INDICATORS—Foreign Trade (Million Dollars)

	EXPORTS			IMPORTS		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	77.5	62.3	60.7	21.8	20.4	21.2
Coal tar products	5.1	3.9	3.2	3.0	3.8	3.9
Medicinals and pharmaceuticals	21.0	15.9	16.4	0.5	0.5	0.4
Industrial chemicals	11.3	10.0	9.6	5.5	5.4	4.5
Fertilizer and fertilizer materials	3.7	3.8	4.4	9.0	8.1	10.6
Vegetable Oils and fats, inedible	1.8	1.7	2.8	6.7	6.4	6.1

A pattern of increasing sulfur supply is evident in last week's expansion revelations by two producers. Of greater importance, perhaps, is Freeport Sulfur's note that mining operations have been launched at its new Garden Island Bay (La.) salt dome deposit. And due in later this month is additional sulfur from the Nash (Tex.) dome, smallest of Freeport's newer installations.

Not quite as ambitious as the No. 2 producer's sulfur expansion program, but significant nonetheless, is the near-doubling of sulfur output in three weeks—to about 350 tons/day—from Standard Sulfur Co.'s Damon Mound property near Houston (Tex.). The company is producing from two of its three wells there, has started drilling operations on a fourth.

Current—and future polyethylene makers—are also digging in, but in this instance it's figurative—to buck competition now that Gargantuan polyethylene expansion plans have gelled. As indicated here (CW Market Letter, Nov. 14), the competitive accent will henceforth be on specific qualities.

Last week, Bakelite—conscious of Du Pont's launching of Alathon 10—burst forth with a new-type polyethylene of its own. Termed "unicellular," the product is claimed to have half the weight and a dielectric constant about one-half that of regular polyethylene.

Bakelite envisions a ready-made market in the insulation of antenna lead-in wires for new UHF and VHF television receivers, will also plug other commercial applicability features.

Tied in with acetylene (see page 71), but yet not very firmly, is trade talk about an upcoming boost in Du Pont's neoprene output. This despite the fact that top company officials—at this writing—have not formally authorized any expansion plans.

The company is studying possible plant sites, however, and is reportedly mulling over several acetylene suppliers' bids for furnishing the neoprene raw material.

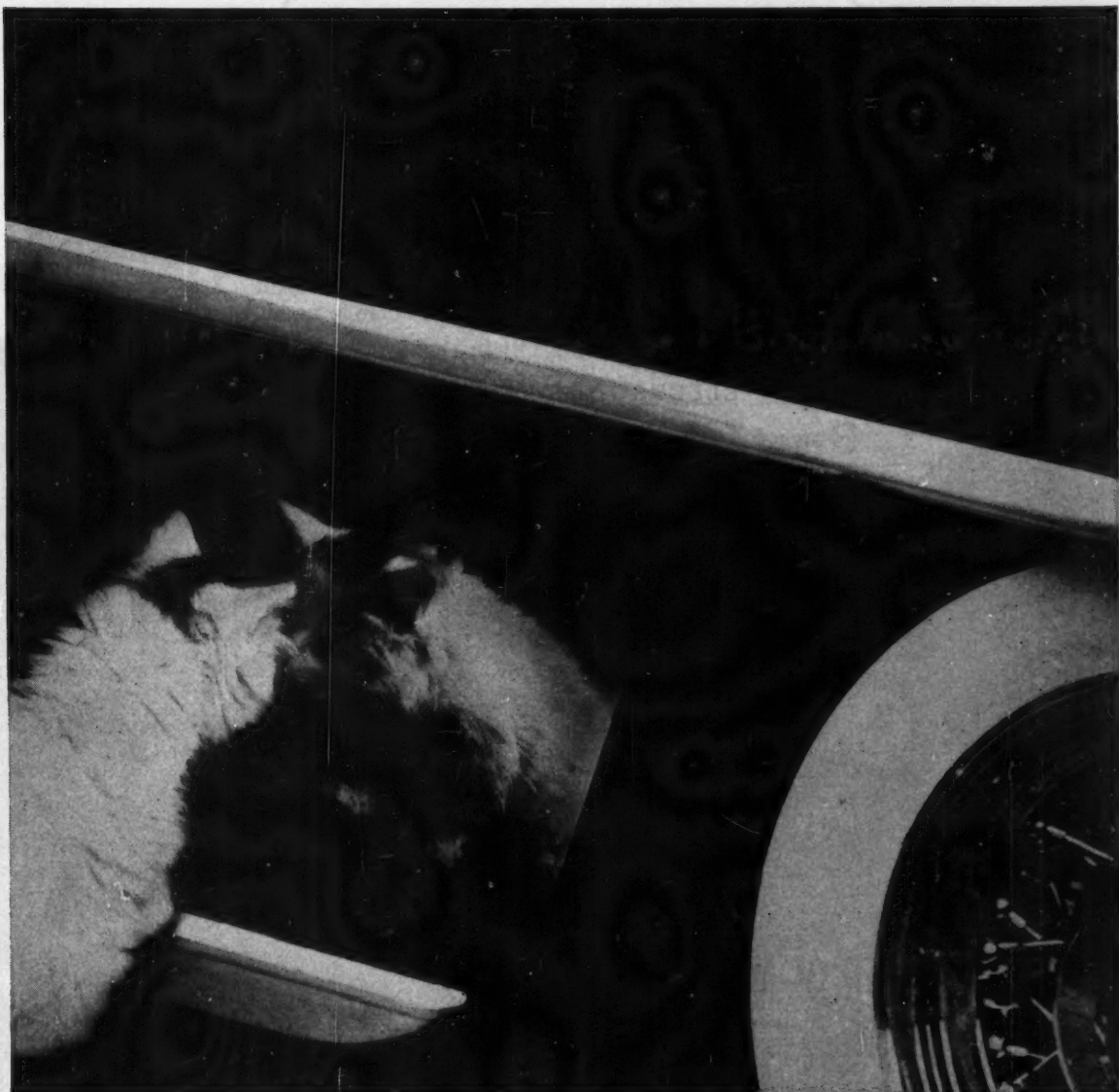
Good bet: win or lose, odds are one bidder, Pittsburgh Consolidation Coal, will go ahead with plans to build a carbide plant, probably near Moundsville (W. Va.).

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending November 30, 1953

DOWN

	Change	New Price		Change	New Price
Nonylphenol, drms., c.l., wks.	\$.0275	\$.305	Shellac, lemon, No. 2, 10-bg. lots	\$.02	\$.37
Octylphenol, drms., l.c.l., wks.	.025	.2475	Tallow, inedible, extra, tks., divd.	.0025	.06

All prices per pound unless quantity is stated.



Customers take a shine to GLOSS... added by alkyds made with Barrett P.A.

Makers of metal finishes know that high gloss is one of their strongest selling points. That is why so many of them build gloss into their products with Barrett Phthalic Anhydride Alkyds—the most versatile base materials in the coatings industry.

Some of the many other important sales-building properties imparted to coatings by alkyds made with Barrett Phthalic

Anhydride include: *Color and gloss retention • durability • fast drying • excellent adhesion • superior weathering • uniform reaction • brushing ease*

As the world's largest producer of Phthalic Anhydride, Barrett is in a unique position to supply your needs with a product that meets the highest standards of purity.

Barrett Phthalic Anhydride is available in both liquid and pure white flake forms—whichever better suits your needs.

*Reg. U. S. Pat. Off.



BARRETT DIVISION



ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

In Canada: The Barrett Company, Ltd., 5551 St. Hubert St., Montreal

BARRETT CHEMICALS

Phenols
Cresols
Cresylic Acids
Xylenols
Pickling Inhibitors
Benzol
Toluol
Xylol
Naphthalene
Hi-Flash Solvent
Phthalic Anhydride
Maleic Anhydride
Dibutyl Phthalate
ELASTEX® 22-P Plasticizer (DOP)
"ELASTEX" 10-P Plasticizer (DIOP)
"ELASTEX" DCHP Plasticizer
"ELASTEX" 50-B Plasticizer

"ELASTEX" 80-P Plasticizer (Dicapryl Phthalate)
PLASKON® Resins
Phenolic Resins
Polyester Resins
Terpene Resins
Urea Resins
Nicotin (Nicotinic Acid)
Pyridines
Picolines
Quinolines
Lutidines
Tar Acid Oils
Neutral Coal-Tar Oils
Coal-Tar Cresols
Bardol® Rubber Compounding Oil
Flotation Agents
CUMAR® Paracoumarone-Indene Resin

Chlorine...

for the Petrochemical Industry

Chlorine is of swiftly growing importance in the production of many new and revolutionary petrochemicals.

Swiftly growing, too, is the use of uniformly high quality GLC GRAPHITE ANODES—in helping the electrolytic industry meet the increasing civilian and defense needs for chlorine and caustic soda.

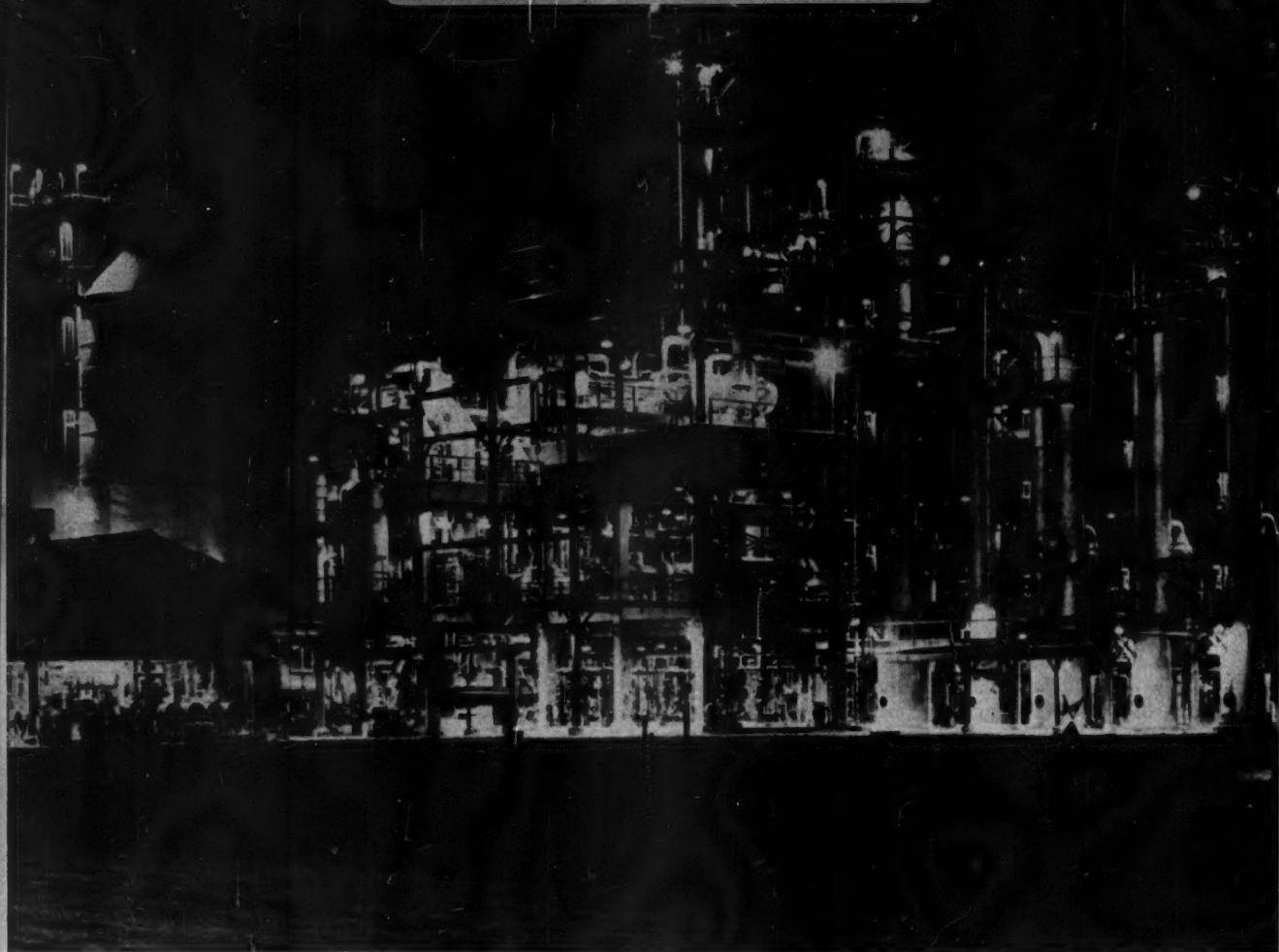
ELECTRODE DIVISION

Great Lakes Carbon Corporation

Niagara Falls, N. Y.



Morganton, N. C.



Courtesy Jefferson Chemical Company Inc.

Graphite Anodes, Electrodes, Molds and Specialties

Sales office: Niagara Falls, N. Y. **Other offices:** New York, N. Y., Oak Park, Ill., Pittsburgh, Pa.

Sales Agents: J. B. Hayes, Birmingham, Ala., George O'Hara, Long Beach, Cal., Great Northern Carbon & Chemical Co., Ltd., Montreal, Canada.

Existing and Projected Acetylene Capacity in the U. S.

Company	Location	Estimated Capacity (thousand tons CaC ₂)		Raw Material
		In Place	Under Way	
Air Reduction (National Carbide)	Louisville, Ky.	150	—	calcium carbide
	Calvert City, Ky.	150	150	calcium carbide
	Ivanhoe, Va.	79	—	calcium carbide
	Keokuk, Ia.	36	—	calcium carbide
Union Carbide (Linde, Carbide & Carbon)	Niagara Falls, N. Y.	150	—	calcium carbide
	Ashtabula, O.	228	—	calcium carbide
	Sault Ste. Marie, Mich.	90	—	calcium carbide
	Portland, Ore.	17	—	calcium carbide
	Texas City, Texas	X	—	natural gas
Monsanto	Anniston, Ala.	22	—	calcium carbide
	Texas City, Texas	X	—	natural gas
American Cyanamid	New Orleans, La.	—	X	natural gas
Pacific Carbide & Alloy	Portland, Ore.	15	6	calcium carbide
Midwest Carbide	Prior, Okla.	—	30	calcium carbide
	Keokuk, Ia.	50	—	calcium carbide
Wulff Process Co.	Los Angeles, Cal.	1.5	—	natural gas, propane or ethane
TVA	Muscle Shoals, Ala.	85*	—	calcium carbide

In order to avoid duplication of figure, all acetylene is figured on the basis of calcium carbide output. The acetylene equivalent is 0.32 lbs. acetylene per pound of calcium carbide.

Though rather small, Wulff Process Co. is included because it is considered a going commercial venture.

Midwest Carbide is a joint Shawinigan-National Cylinder Gas concern.

Pacific Carbide & Alloy is partly owned by Shawinigan and NCG.

All current expansion is slated for completion by Jan. 1, 1955.

X—Information on American Cyanamid, Monsanto and Union Carbide's acetylene from natural gas operations is scarce, but studied industry "guesstimates" peg total at approximately 100,000 tons acetylene/year from natural gas when American Cyanamid comes on-stream first quarter of '64.

*TVA's carbide works has been on standby for the past six years. Should the need arise, says TVA, it could be put back into operation.

Billion-Pound Beginning

U. S. moves from fifth into second place among acetylene leaders as output heads skyward.

Acrylonitrile and high-pressure compounding threaten to send consumption rocketing beyond the billion-pound-a-year mark.

Industry looks to natural gas as the foundation of future acetylene expansion as calcium carbide potential tapers off.

Odd as it may seem tagging a multi-million-pound-a-year chemical a mere infant, that is exactly what chemical process industry men are now doing to acetylene. The reason, though, isn't hard to understand, even in face of the chemical's current "adequate" label. Growth potential is tremendous, declare observers.

Experts peg 1955 acetylene demand at a whopping near-one billion pounds, 1960 demand at double that. The vinyls (chloride and acetate), neoprene and trichloroethylene, all big users today, are figured for steady risers, while acrylonitrile and high-pressure acetylene compounding are likened to long-fused powder kegs with the match just recently applied.

To keep pace, capacity is similarly moving ahead. Facilities, estimated at 750,000 tons/year of calcium carbide in 1950, will double in 1955, double again by 1960.

Quiet Hum: The comparatively small cluster of current acetylene producers* (see plant output table) by no means wholly reflects the widespread excitement engendered by acetylene's rapid growth. Many other companies are actively interested. Among these:

• Allied: "While there is nothing ready for development, we, like

* While many small firms generate acetylene from calcium carbide, for the sake of simplicity, only those companies that make the carbide or obtain acetylene from natural gas are considered prime producers.

everyone else, are looking at all the acetylene processes in view of recent German developments."

• Phillips: About to join Borden and GAF at one time in the proposed Alamo acetylene chemical operation, Phillips is said to be still interested in acetylene manufacture for butanediol production.

• Mathieson: "We are interested in acetylene and are doing some work on it . . . can say nothing further at present."

• Reilly: Definitely interested in acetylene, Reilly declares its work to date is purely exploratory, that it's not wedded to any process or location. Preferences as to buying or producing and whether to manufacture calcium carbide or crack natural gas, are still undecided, says the firm. And, while not releasing information on the process involved or amount produced, Reilly admits that a captive production unit is now in operation at its Indianapolis plant.

• Air Reduction: Strictly an acetylene-from-carbide producer, Airco in conjunction with Continental Oil has piloted both the Sachse and the Wulff gas processes, is still interested but declares it can't beat the cost of its present carbide operations.

Clip this adv. for new chart on fatty alcohols

—handy, file-size buyers' guide

Best way to make sure your facts on fatty alcohols are up-to-date is to look at the new data chart on CACHALOT. At one glance you'll see comparative analyses of fourteen basic types of cetyl, oleyl, and stearyl alcohols. CACHALOT is the largest variety of fatty alcohols available in tonnage lots of controlled purity. You can get the exact combination of properties you need for your use. And the new uses for these versatile raw materials range all the way from oil additives to "controlled-suds" detergents. CACHALOT NF, USP, and technical grades are ready for prompt shipment, in quantity, at low prices. For the helpful reference chart, just clip this advertisement to your letterhead and send to *M. Michel and Company, Inc.*, 90 Broad Street, New York 4, N. Y. For over a quarter century basic suppliers to chemical manufacturers, their registered trade name for the finest fatty alcohols is

Cachalot®



ORIGINAL PRODUCERS
OF MAGNESIUM
SALTS FROM
SEA WATER

Magnesium
salts
from the sea

MAGNESIUM
CARBONATES
HYDROXIDES
OXIDES

MARINE

MAGNESIUM PRODUCTS

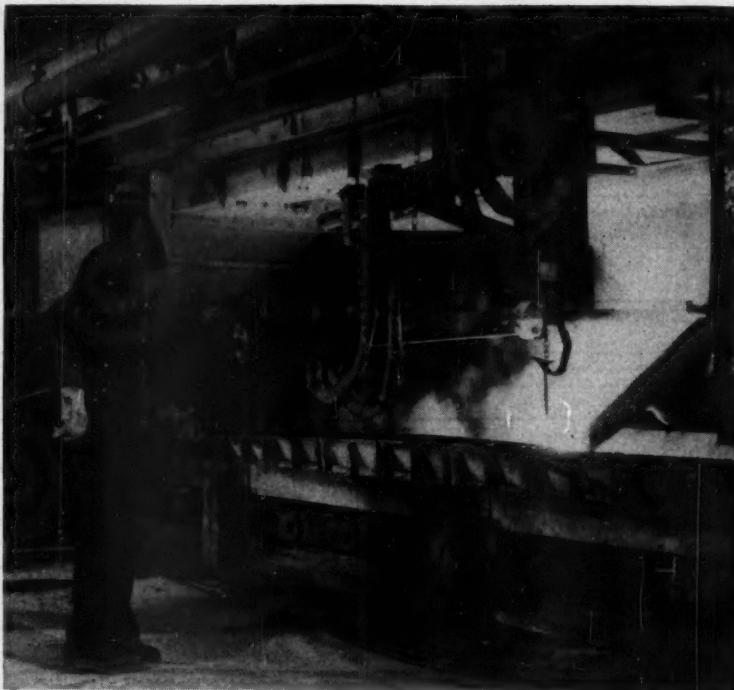
DIVISION OF MERCK & CO., INC.

Main Office, Plant and Laboratories
SOUTH SAN FRANCISCO, CALIFORNIA

Distributors:

WHITTAKER, CLARK & DANIELS, INC. 240 West Broadway, New York	G. S. ROBIN & CO. 126 Chestnut Avenue, St. Louis
CHICAGO: Harry Holland & Son, Inc.	
PHILADELPHIA: R. Felt Co.	
TORONTO: Richardson Agencies, Ltd.	THE C. P. HALL CO. Albion, Chicago, Los Angeles, Newark
PALMER SUPPLIES CO. Cincinnati, Cleveland	

MARKETS.



NORWEGIAN CARBIDE FURNACE: Still room for improvement?

• National Petrochemicals: "Acetylene isn't in our plans now, but we aren't writing it off for the future."

• General Aniline & Film: Now generating acetylene at its Grasselli (N.J.) pilot plant, GAF may make it from natural gas later as the high-pressure operation expands.

Material Interchange: When these cogitations become working realities, natural gas (CIW, Apr. 28, '51) will probably account for the lion's share of acetylene output. Now carrying about 10% of the load, it's slated for an eye-widening 75% by 1975. Calcium carbide, on the other hand, while coming in for its share of present expansion (see *plant output table*), is rapidly running out its string of potentialities.

Generally considered the most economical operation today, the carbide process is being hoisted on its own petard: its very perfection works against it. Many experts feel the carbide industry has reached a technically static state with no room left for improvement.

However, Air Reduction's Calvert City works features a new Norwegian rotating hearth furnace (see *cut*), so there still seems to be at least slight room for some technical improvement.

Too, since practically all the calcium carbide produced in the U.S. is converted to acetylene, there is little possibility of a higher conversion.

And limited availability of sites with readily accessible raw materials (high-grade coke and limestone) and cheap power is another factor rapidly fencing in the carbide process.

To a degree, location also hampers the natural gas operation. Limited by 15 psi. maximum pressure, acetylene can be pipelined only to customers within an approximate half-mile radius. But though the market must move to the acetylene producer, gas outlets aplenty provide consumers with a wide locale selection.

Important, too, is the role ethylene will play as an alternate to acetylene in the production of vinyl chloride, acrylonitrile, acetic acid and chlorinated hydrocarbons.

But taken by and large, these problems—market location, raw material availability, by-product manufacture, alternate process routes—will eventually be resolved in their lowest common denominator: surging acetylene demand.

Out of the Past: Behind this rapid growth lie reasons that took root in recent U.S. history. For it was here that first plant-scale calcium carbide production was begun in 1895.

At that time output was channeled into acetylene lamps for illumination. This soon fell by the wayside with the perfection of electric- and battery-operated light sources. Then came the Frank-Caro process for

HARSHAW CHEMICALS

For your Industry!
For your Laboratory!

Send your order to
HARSHAW CHEMICAL for

Electroplating Salts, Anodes and Processes	Glycerine
Driers and Metal Soaps	Preformed Catalysts, Catalytic Chemicals
Cadmium Pigments	Synthetic Optical Crystals
Ceramic Opacifiers and Colors	Agricultural Chemicals
Fluorides	Fungicides
	Chemical Commodities

Send your order to
HARSHAW SCIENTIFIC for

Laboratory Instruments
Apparatus and Chemicals



FREE
this sixteen page book
"Harshaw Chemicals for
Industry and Laboratory"
which describes
Harshaw's major activities

THE HARSHAW CHEMICAL CO.
CLEVELAND 6, OHIO

Chicago • Cincinnati • Cleveland • Detroit • Houston • Los Angeles
New York • Philadelphia • Pittsburgh

HARSHAW SCIENTIFIC
DIVISION OF THE HARSHAW CHEMICAL CO.

Cleveland • Cincinnati • Detroit • Houston • Los Angeles • Philadelphia

fine organics—a dependable source
for highest quality
chemicals

THYMOLPHTHALEIN
As pH indicator
and test for blood

DIPHENYLTHIOCARBAZONE
(DITHIZONE)
Reagent for Co, Cu, Pb and Hg.

PHENOLSULFONPHTHALEIN
(PHENOL RED)
For estimation of Renal Function.
Also as indicator.

BENZIDINE DIHYDROCHLORIDE
Reagent for test for blood

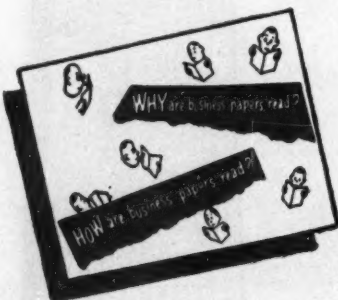
PROPYL GALLATE
An anti-oxidant for edible animal fats

Our research department has
solved the synthesis of such
complicated organic chemicals as
PHENYLEPHRINE HYDROCHLORIDE
U.S.P., TETRACAINE U.S.P. &
METHONIUM HYDROBROMIDE
pharmaceutical grade. We will
be glad to supply these materials,
as well as to develop
synthesis and manufacture
your specific products.



Write for prices
and Technical
Data Sheets
Dept. C.W.

**FINE
ORGANICS, inc.**
211 East 19th Street
New York 3, N. Y.

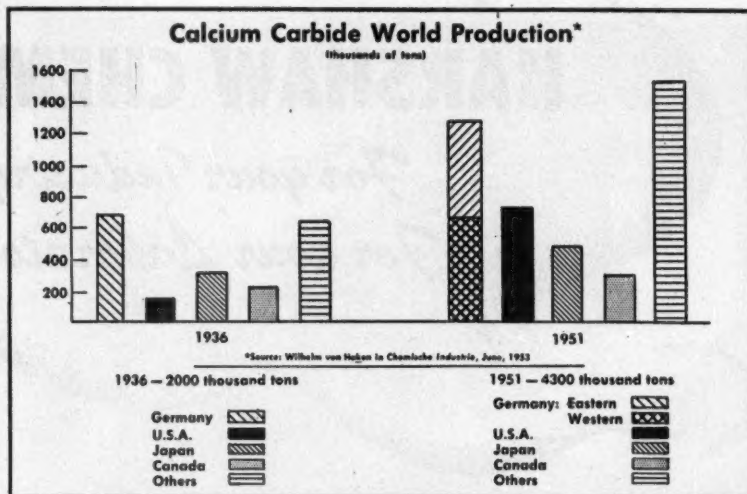


A copy of this quick-read-
ing, 8-page booklet is yours
for the asking. It contains
many facts on the benefits
derived from your business
paper and tips on how to
read more profitably. Write
for the "WHY and HOW
booklet."

.....

**McGraw-Hill Publishing Com-
pany, Room 2710, 330 West
42nd St., New York 36, N. Y.**

MARKETS.



ACETYLENE LEADERS: U.S. makes its bid for second place.

preparation of calcium cyanamide
from calcium carbide and nitrogen.
While not produced in the U.S., cy-
anamide remains an important car-
bide outlet in the rest of the world.

World Carbide End Use Pattern*

	1938	1951
Calcium cyanamide	45-50%	25-30%
Organic chemicals	10-15	50-55
Misc. (welding, illumination, etc.)	35-40	20-25

* Wilhelm von Hagen in *Chemische Industrie*,
June '53.

The later uses—welding and chem-
ical synthesis—actually proved the
mainstay of the U.S. domestic car-
bide industry. Starting slowly, chem-
ical synthesis grew rapidly; today, an
estimated 70% of acetylene output
funnels down into chemicals, the rest
into welding, where acetylene con-
sumption (though continuing on a
relative downgrade) is once again
picking up.

Some experts feel that by 1955
chemicals could move up another 5%,
take an estimated 750 million lbs. of
acetylene output. The big question,
market men are asking themselves:
How long will it take acrylonitrile
and high-pressure compounding to
really get going? Leaving this to its
own long-range solution, a more im-
mediate acetylene - for - chemicals
breakdown would look like this:

U.S. Acetylene End Use Pattern 1955 (est.)

Vinyl chloride	30%
Neoprene	28
Trichloroethylene	20
Acrylonitrile	10
Vinyl acetate	8
Misc.	4

Fallow Future: The impetus sup-
plied to acetylene chemistry by Wal-
ter Reppe has yet to spend itself on
the chemical market. His high-pres-
sure work, picked up and polished
by GAF in this country (*CW*, June 6),
has provided many commercial-piq-
uing syntheses. Most teasing: cyclic
polymerization of acetylene to cyclo-
octatetraene. It could prove the key
to an eight-ring chemistry and a po-
tentially unbounded acetylene market.

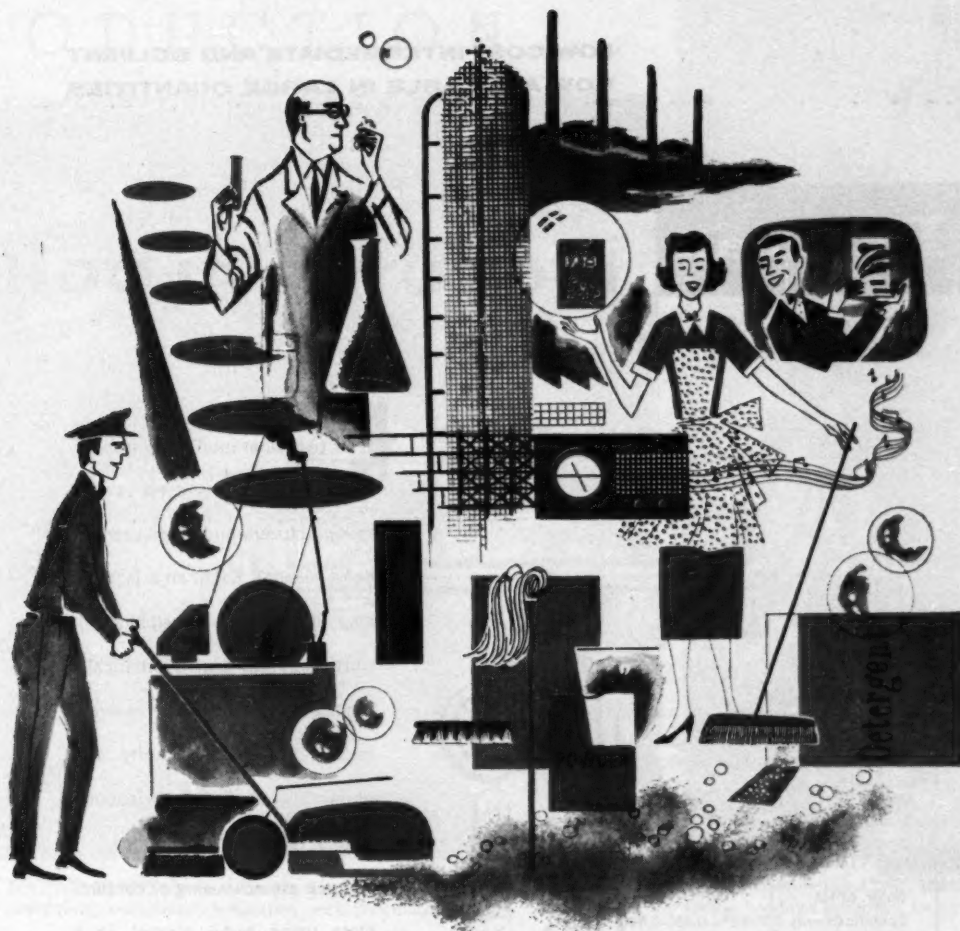
Significant also is the comparatively
low pressure work currently carried
on by Air Reduction Chemical in the
synthesis of methyl acetylene, methyl
vinyl acetylene and derivatives of
acetylenic alcohols.

Acetylene well could be, as many
observers believe, just a billion-pound
baby.

Pulp Stretch

The U.S. wood pulp industry is
reaching for new records this year,
and it looks as if it is going to get
them. Puget Sound Pulp & Timber
Co.'s (Bellingham, Wash.) Pres. L.
Turcotte pointed to rising produc-
tion and imports, noting in his
quarterly review that America is ac-
tually consuming more pulp. While
inventories are running about the
same in relation to consumption—
8.2% currently, 8.7% at same time
last year and 6.6% in 1951—exports
have decreased.

Production for the first nine months
of this year already has bettered
1952's 12,260,000-ton total by 901,-
000 tons. Imports likewise have gone
ahead of last year's 1,346,000 tons by
an estimated 275,000 tons, while ex-
ports are running 68,000 tons be-
hind 1952's 164,000 tons.



PUTTING THE PROFIT IN CLEANING



CLEANING DISHES and household items takes hundreds of millions of pounds of detergents annually. Here Monsanto phosphates increase sales power by increasing cleansing power.



CLEANING DIESEL locomotives and other heavy industrial equipment is big business. Here Monsanto phosphates increase cleansing effectiveness, lower maintenance costs.



SEARCHING OUT SECRETS of cleansing and its fundamentals is one of the most important aims of several well-equipped, well-staffed Monsanto laboratories.

Monsanto Phosphates Help Industry Clean Up

The well-scrubbed look home and industry are sporting these days is no accident. It's part and parcel of the tremendous impetus given cleaning by the development of new detergents over the last decade.

Aiding manufacturers in the development of better cleaning compounds is the tremendous number of products made by Monsanto's Phosphate Division. Sodium tripolyphosphate, tetrasodium pyrophosphate, trisodium phosphate, monosodium phosphate and literally

dozens of other important products are used today by all major manufacturers to improve detergent effectiveness.

To find out more on how Monsanto—with one of the broadest lines of phosphates in the country—can help *your* business, write today to MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle, Twin Cities. In Canada, Monsanto Canada Ltd., Montreal.

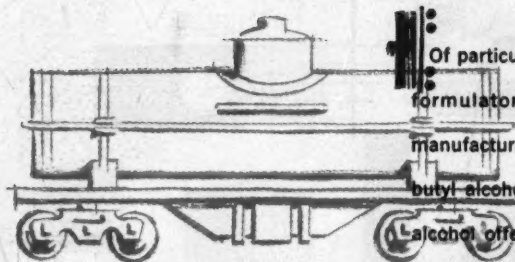


SERVING INDUSTRY...WHICH SERVES MANKIND

LOW COST INTERMEDIATE AND SOLVENT
NOW AVAILABLE IN LARGE QUANTITIES

Eastman

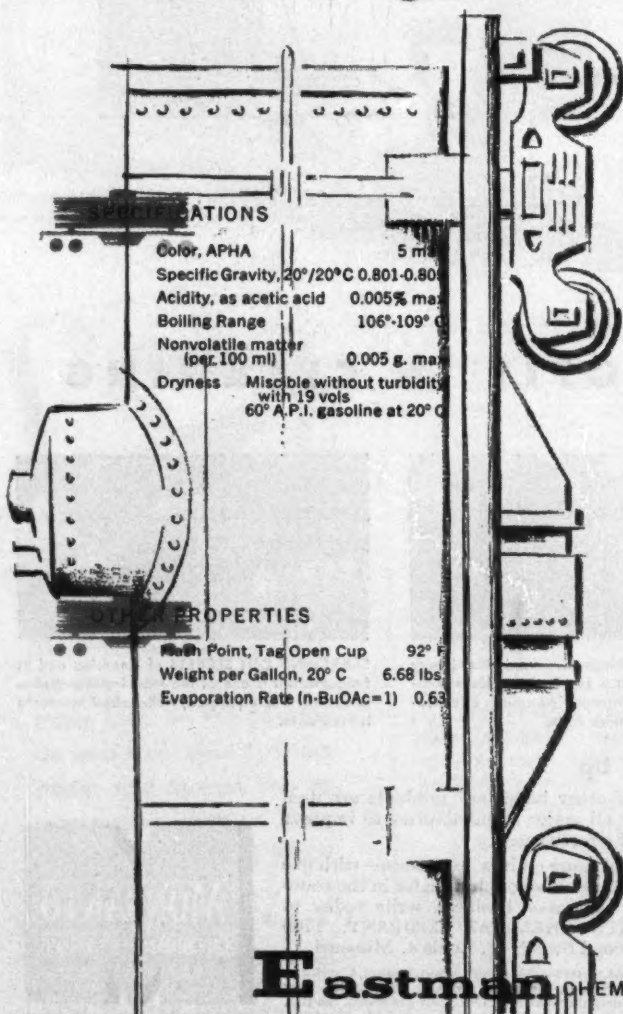
ISOBUTYL ALCOHOL



Of particular interest to lacquer formulators, butylated resins manufacturers and other users of butyl alcohol, Eastman's isobutyl alcohol offers the possibilities of worthwhile savings. Synthetically produced from petroleum raw materials, the supply, purity and uniformity of Eastman isobutyl alcohol is assured.

If you are now using or contemplate using butyl alcohol as a solvent or as an intermediate, investigate Eastman isobutyl alcohol. We will be pleased to send samples and to cooperate with you in adapting your process or solvent system to take advantage of this Eastman product.

SALES OFFICES: EASTMAN CHEMICAL PRODUCTS, INC., Kingsport, Tenn.; New York—260 Madison Ave.; Framingham, Mass.—65 Concord St.; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Building; Houston—412 Main St.; WEST COAST: WILSON MEYER CO., San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.



ANALYTICAL DATA

Color, APHA	5 max
Specific Gravity, 20°/20°C	0.801-0.804
Acidity, as acetic acid	0.005% max
Boiling Range	106°-109° C
Nonvolatile matter (per 100 ml)	0.005 g. max
Dryness	Miscible without turbidity with 19 vols 60° A.P.I. gasoline at 20° C

PHYSICAL PROPERTIES

Flash Point, Tag Open Cup	92° F
Weight per Gallon, 20° C	6.68 lbs.
Evaporation Rate (n-BuOAc=1)	0.63

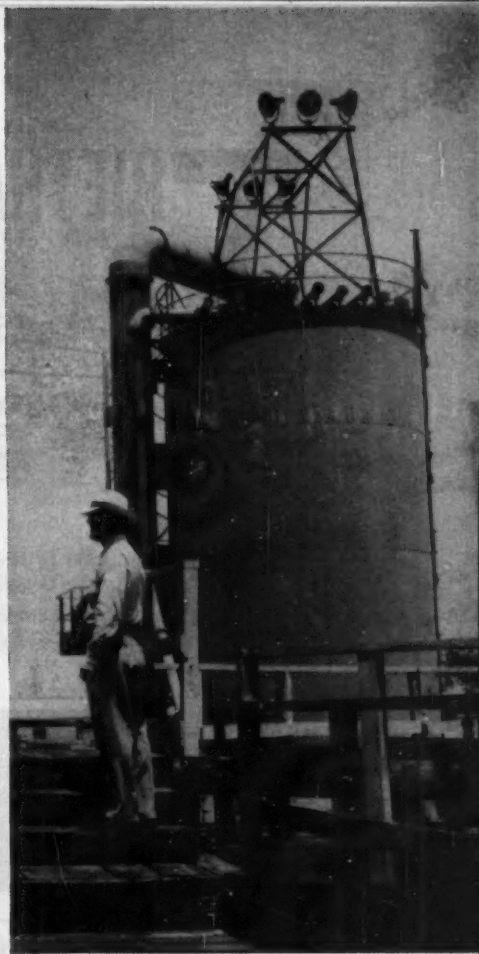
Eastman

CHEMICAL PRODUCTS, INC., KINGSFORT, TENNESSEE
SUBSIDIARY OF EASTMAN KODAK COMPANY

PRODUCTION



AT THE IODINE PLANT in Seal Beach, Dow cleans "fossilized" sea water in skimming tanks (left), completes clarification with flocculation.



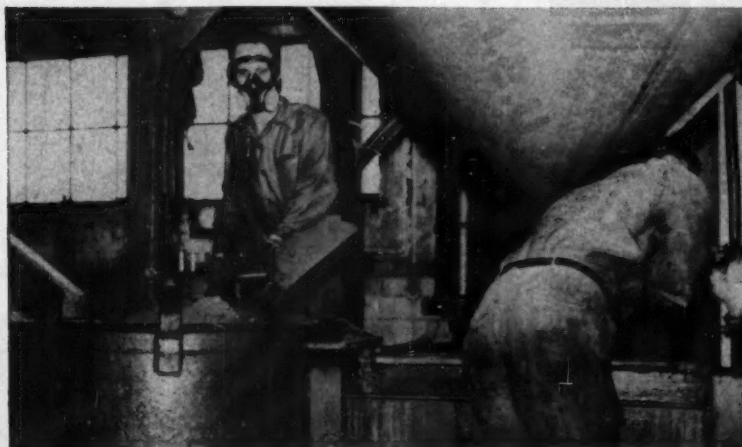
BRINE then oxidized with chlorine, stripped. Iodine becomes hydrogen iodide.

Two Men and a Tub

To most chemical engineers, bathtub chemistry is a term that carries an unpleasant connotation. Yet bathtubs are the key vessels in Dow Chemical's Seal Beach (Calif.) two-man potas-

sium iodide plant toured last week by the CW CAMERA.

For the main reaction, Dow employs a plain, old-fashioned cast iron tub (complete with claws), using



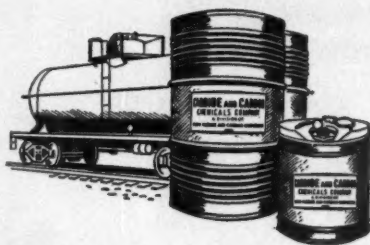
IODINE IS PRECIPITATED, drawn off and shoveled into a heated kettle. It's purified with heat and sulfuric acid, is cast, crushed and packaged.



PRODUCTION OF the iodide starts in this bathtub.


TRIETHANOLAMINE

Albany
Boston
New York
Newark
Philadelphia
Baltimore
Charlotte
Atlanta
Buffalo
Pittsburgh
Cleveland
Cincinnati
Detroit
Indianapolis
Chicago
St. Louis
Houston
Seattle
San Francisco
Los Angeles



Drum stocks of Triethanolamine are maintained in principal industrial areas. Larger quantities are shipped directly from our plants. Phone or write our nearest office for information and prices.

Carbide and Carbon Chemicals Company

A Division of Union Carbide and Carbon Corporation
30 East 42nd Street  New York 17, N. Y.

In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

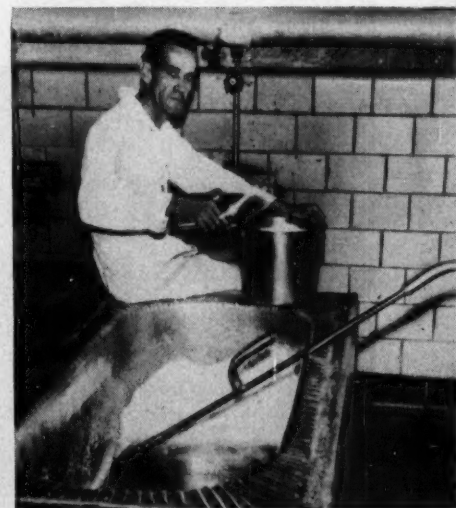
PRODUCTION



IODIDE-IODATE CRYSTALS are smelted to convert iodate to iodide.

rubber stoppers to plug up the normal openings. And formerly it used one for the crystallization step as well. A few years ago, however, the firm switched to special stainless steel tubs, but pitting has been a problem and it's now seriously considering a return to the old-fashioned method. If it does, says Plant Manager Fred Lusk, a modern, thin-walled tub will not do. He has, in fact, gone to considerable trouble searching second-hand markets to line up a satisfactory relic.

Small for Big: Adjacent to Dow's iodine plant, the potassium iodide unit qualifies as Dow's smallest plant.



AFTER purification, it's crystallized over a period of three days.



HIGRADE MURIATE OF POTASH
62/63% K_2O
GRANULAR MURIATE OF POTASH
60% K_2O Min.
MANURE SALTS 20% K_2O Min.

**UNITED STATES
POTASH COMPANY,
INCORPORATED**
30 Rockefeller Plaza,
New York 20, N. Y.

Will your new plant be obsolete before completion?

Some plants are "born old." A modern exterior that gives every indication of modern planning may hide old-fashioned thinking about equipment and processes — resulting in an unnecessary drain on manpower, materials, and profits.

Fast-moving technical innovations and the tightening competitive situation call for engineering skilled in modern design. WIGTON-ABBOTT CORPORATION has gained national recognition for its ability to comprehend and plan ahead for modern industrial trends. WIGTON-ABBOTT

engineers are known for their up-to-date awareness of technical developments, and have in fact originated some of these developments, as reported in various trade journals.

Avoiding the failures of omission as well as commission is a must in planning today's new facilities with tomorrow in mind. Anything less exacts a severe penalty on production costs. WIGTON-ABBOTT welcomes your inquiry about your proposed new plant or the modernization of your present one. Write for our booklet, "*Packaged Plant Construction*." It may save you many disappointments.

Services for the Process Engineering Field

Economic surveys and analyses



Development of new process



Process design from client's flow sheet



Conversion of existing facilities



Design and construction from pilot plant data

Wigton-Abbott Corporation

FOUNDED 1924

Main Offices: Plainfield, N. J.

Process and Plant Designers... Engineers... Constructors



CHEMICAL FINANCING

is NOT ALL we do

If you are considering new projects or Company acquisitions in your growth picture, perhaps we can be helpful even though your Company may not need financing.

For information consult:

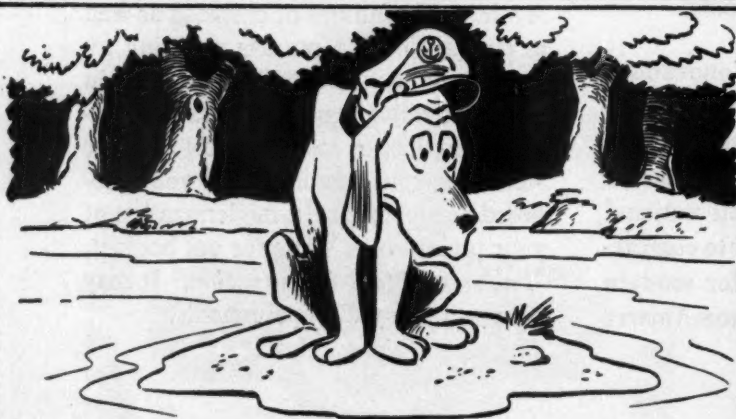
Chemical Department

RICHARD B. SCHNEIDER, Vice President

Empire Trust Company

7 WEST 51st STREET, NEW YORK 19, N. Y.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION



NO COSTLY LAYOVERS

Don't be left "High 'n' dry" with products that need fast, continuous movement. Specify COMMERCIAL barge transportation over the Gulf and Mississippi-Ohio River System for bulk and liquid cargoes . . . no layovers *save time and money!*



**COMMERCIAL PETROLEUM
& TRANSPORT CO.**

HOUSTON, TEXAS • ST. LOUIS, MISSOURI
2919 BUFFALO DRIVE RAILWAY EXCHANGE BLDG.

PRODUCTION

Production is mostly captive; Eastman Kodak is the only major outside customer. This is easily understood, for Dow, prime supplier of iodine to other iodide producers, has no intention of competing with its own customers.

Iodine for the plant comes from nearby Signal Hill oil well brines. Iodine content of the brines runs about 65 ppm., compared with the 0.1 ppm. of ordinary sea water. Since about 10 gal. of this brine is brought up with each gallon of oil, disposal of the oil-contaminated brines would be a major problem for the oil companies were it not for the iodine plant. Dow has built an extensive system of brine collection pipes, disposes of the brine in lieu of paying for raw materials.

To produce potassium iodide, elemental iodine is first reacted with caustic potash in one of the old bathtubs. Accompanying water is then driven off in an evaporator. Mixed potassium iodide and potassium iodate crystals from the evaporator are heated in a smelter at 600 C until the mass is completely fused. This is usually done overnight, converts the iodate to iodide.

Crude crystals are next dissolved in steam condensate. Barium iodide formed from ferric iodide and barium carbonate is used to remove any sulfates. Next, the solution is neutralized (the pH is brought up with ferric iodide, brought down with potassium



CENTRIFUGING and drying are last steps before packaging.

TRONA

Is a Basic Producer of these Chemicals Indispensable to Industry and Agriculture

BORAX

POTASH

SODA ASH

SALT CAKE

LITHIUM CHEMICALS • BROMINE CHEMICALS

and a diversified line of specialized
Agricultural, Refrigerant and
Industrial Chemicals



American Potash & Chemical Corporation

2300 West Sixth Street, Los Angeles 54, California
122 East 26th Street, New York 17, New York

ESTON CHEMICALS DIVISION 3100 East 26th Street, Los Angeles 23, California
Plants at Trona and Los Angeles, California

tracers...to opportunities in the chemical

REPLIES (Box No.): Address to office nearest you
NEW YORK: 830 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

MANAGEMENT SERVICES

EVANS

Chemical Research—Processes—Products
Development Problems
Complete Laboratory—Pilot Plant
Mechanical & Optical Sections
Ask for new Scope Sheet C
Listing over 100 of our activities

EVANS RESEARCH & DEVELOPMENT CORP.
250 East 43rd St., N. Y. 17, N. Y.

JAMES P. O'DONNELL

Engineers

CHEMICAL PROCESS PLANTS

Design—Procurement—Construction Supervision
39 Broadway, New York 6

Robinette Research Laboratories, Inc.

Industrial Research :: Consultation
Technical and Economic Surveys :: Product
Development :: Chemical Market Research

16 East Lancaster Avenue, Ardmore, Pa.
Tel. Midway 2-6457

SIRRINE

ENGINEERS

Plant Design & Surveys covering Chemical Elec-
trochemical and Metallurgical Production; Indus-
trial Waste Disposal; Water Supply & Treatment;
Analysis & Reports

Greenville South Carolina

EMERSON VENABLE

CONSULTING CHEMISTS AND ENGINEERS
Pa. Registry No. 12606

Product Development From Test Tube
to Plant Construction

Chemistry-Physics-Pharmacology-Engineering
6111 Fifth Ave., Pittsburgh 32, Pa.
HI land 1-8015

EMPLOYMENT

Wisconsin Alumni Research Foundation

LABORATORY SERVICES

Project research and consultation in Biochemistry,
Chemistry, Bacteriology and Entomology.
Occasional or periodic testing services.

Write for price schedule

P.O. Box 2059 • Madison 1, Wisconsin

Selling Opportunities Offered

Wanted

CHEMICAL SALES REPRESENTATIVE

Minimum three (3) years' experience to expand
sales force of medium size manufacturer of fine
industrial chemicals. Requires Ch.E. or B.S. in
Chemistry, under 35 years old, capable of growing
in an expanding organization with sound financial
backing. Salary, expenses and car. Write giving
complete details, include non-returnable recent
snapshot, if available.

RW 9889 Chemical Week
520 N. Michigan Ave., Chicago 11, Ill.

Positions Vacant

EDITORS WANTED

In order to expand and diversify the edi-
torial service rendered by **CHEMICAL**
WEEK, the editor is seeking three men
with these specific backgrounds:

(1) Chemist or chemical engineer with 3 to 10
years' experience in chemical production. He must
be well versed in processing, process technique
equipment.

(2) Chemist or chemical engineer, expert in com-
modity studies. Ideal experience: 3 to 5 years as a
market researcher.

(3) Chemist with 3 to 5 years' experience in in-
dustrial research.

In addition to the foregoing, these men must (1)
enjoy meeting people, (2) have the ability to dis-
cuss facts and interpret them intelligently, (3) be
able to write lucidly.

Address your resume to:

Gerald B. Reynolds, Personnel Relations

McGRAW-HILL PUBLISHING CO., INC.
830 W. 42nd St. New York 36, N. Y.

Chemist. Development work. Small organic pig-
ments company. Metropolitan area—New Jersey.
Give background and salary expected. P-9901,
Chemical Week.

Selling Opportunities Wanted

A.M.C.—Paris 2110 rue de Richelieu—is inter-
ested for Agency in West Europe, of raw material—
(chemical and mineral products) for Paints
—Rubber—Plastics and Wallpapers.

Sales engineer twenty years experience han-
dling raw materials to paint, paper, and rubber
industries seeks opportunity in South. SA-9912,
Chemical Week.

Manufacturers' Representative covering Illinois
and Wisconsin wants additional lines raw materi-
als to paint, paper, and rubber industries. RA-
9927, Chemical Week.

EQUIPMENT—used-surplus

For Sale

Ball Tube Mill, 3' x 6', Kennedy Van Saun Con-
tinuous, air-swept mills, with drive, feeder, fan
and steel balls. Perry Equip. Corp., 1415 N. 6th,
Phila. 22, Pa.

Dryers: Proctor and Schwartz, one 8ft. wide by
37 ft. centers, one 8 ft. wide by 48 ft. centers.
Also 2 Ajax Hot Water Heaters, 2,000,000 Btu.
P.O. Box 431, San Bernardino, California.

Filters: Shrivvers, Sperry, Sweetland, etc. Perry
equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Aluminum, compartment—2,700 gal. &
3000 gal. Perry Equip. Corp., 1415 N. 6th St.,
Phila. 22, Pa.

Tanks, S/S—16,000 gal. to 2½ gal. Perry
Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

Tanks, Steel, 15,000 gal. with 970" of 3" coil
and 40 HP vertical agitator, Perry Equip. Corp.,
1415 N. 6th St., Phila. 22, Pa.

Wanted

Wanted at Once

Chemical Equipment for Defense Plant Work
Autoclaves Kettles
Centrifuges Mixers
Dryers Pressors
Filters Pulverizers
Tanks

Interested in complete plants—either now operating
or idle. Give full particulars when writing
W 3117 Chemical Week
330 W. 42nd St., N.Y. 36, N.Y.

Wanted

Machinery, Chemical and Process. Everything
from single item to complete plant. Consolidated
Products, Observer Hgway, Hoboken, N.J.

DEALERS in used-surplus

BUY WITH CONFIDENCE

Our 30th Year

"CONSOLIDATED"

YOUR DEPENDABLE SOURCE OF SUPPLY
OF USED AND REBUILT MACHINERY

Vacuum Dryers
Reaction Kettles
Rotary Filters
Filter Presses
Heavy Duty Mixers
Centrifuges

Columns
Pulverizers
Packaging and Wrap-
ping Equipment
S/S and non-corrosive
Storage Tanks
Autoclaves

Consolidated Products Co., Inc.
Observer Highway & Bloomfield St.

Hoboken, N. J.
HOBOKEN 3-4425

New York Phone: BArlay 7-0600

Your First Source

NEW YORK'S
LARGEST STOCK
RENTAL-PURCHASE PLAN

FIRST MACHINERY CORP.
157 Hudson St., N. Y. 13
Phone WORTH 6-3436

R. Gelb & Sons, Inc.

Largest stock of used chemical
equipment in the United States
66 Years of Leadership

R. Gelb & Sons, Inc.
Union, N. J.
Unionville 2-4900

FANS, BLOWERS, EXHAUSTERS

Exclusively
27 Years as Nation's Rebuilding Specialist.
Fully Guaranteed—
Both Rebuilt and New

WILLIAM W. MEYER & SONS, INC.
8351 Elmwood Avenue Skokie, Illinois
Chicago Telephone: KEystone 9-8380

BRILL FILLS THE BILL

Est. 1926

New and Rebuilt
CHEMICAL & PROCESS EQUIPMENT
"From a single item to a complete plant"
BRILL EQUIPMENT CO.
2407 Third Ave., N. Y. 51, N. Y.
CYpress 2-5703

CHEMICALS OFFERED

Synthetic Detergent (Dense Bead). Approx-
imately 35% activity. Available 500,000 lbs. @
5¢ lb. in bags. Marwell Co., 13th & Gove Sts.,
Jersey City 2, N.J. Journal Sq. 3-0554.

DON'T FORGET

the box number when answering advertise-
ments. It is the only way we can identify
the advertiser to whom you are writing.

process industries

CHEMICALS WANTED

BUYERS OF SURPLUS

CHEMICALS — OILS — SOLVENTS
DRUGS — RESINS — WAXES
PLASTICS — COLOR — ETC.

BARCLAY CHEMICAL COMPANY, INC.
75 Varick Street New York 13, N. Y.
WORTH 4-5120

Chemical Service Corporation

READY TO BUY

Chemicals, Plasticizers, Solvents
Drugs, Pharmaceuticals, Oils
Pigments, Colors, Waxes, etc.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street, New York 5, N. Y.
MANover 2-6970

BUSINESS OPPORTUNITIES

WANTED

TO PURCHASE BUSINESS

We are desirous of expanding our activities in the chemical and specialties field and have funds available for the purchase of an established company with a view to merging operations.

Chemical Concentrates Corporation
P. O. Box F, Clinton Hill Station,
Newark, N. J.

PLANT FOR SALE

Metropolitan Area. 65,000 sq. ft. Three story brick building. 2 oil-fired boilers over 700 B.H.P. each 100 lb. rating. Building sprinklered thruout with freight elevators, 185' loading dock, and 6,000 sq. ft. yard. Unlimited soft water and city sewage. Brick garage 10,000 sq. ft. sprinklered and heated. Easily accessible to various communities, highways and turnpike. Plant now operating with plentiful local labor.

BO 8221 Chemical Week
330 W. 42 St., New York 36, N. Y.

Laboratory and office, Midtown N.Y.C. For sale or Rent. Fully equipped. Excellent for Consultant or Control and Development Laboratory. BO-9954, Chemical Week.

"TRACERS"

UNDISPLAYED RATE:

\$1.65 a line, minimum 2 lines. To figure advance payment count 5 average words as a line.

POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY wanted undisplayed advertising rate is one-half of the above rate, payable in advance.

DISPLAYED RATES ON REQUEST.

PRODUCTION

carbonate); and heavy metal salts are precipitated with hydrogen sulfide.

After filtration, the semipurified potassium iodide solution is placed in temporary storage to complete the first half of the processing. The second half starts with crystallization in the newer tub. Here the water is boiled off over a period of three days to leave a saturated solution of potassium iodide. After the coils are removed and the solution cools, the mother liquor is removed under vacuum and recirculated.

EQUIPMENT

Paper Machine: Parsons & Wittemore, Inc. (New York, N.Y.) has introduced in this country a miniature Fourdrinier paper machine, which it says, produces paper with only a 9-in. trim but of quality comparable to a full-scale Fourdrinier. It operates at the same pressure and temperature as its bigger brother, runs at speeds up to 8 ft./min., produces paper at the rate of 35 lbs./hour, will sell for about one-fifth the cost of a full-scale 36-in. trim model. P&W reports several machines have already been installed, expects they'll prove useful in solving production problems in making present types of paper, also sees them as assisting in the development of new styles.

Explosion-Proof: U.S. Electrical Motors Inc. (Los Angeles) is bringing out a new, right-angle Syncrogear with explosion-proof motor. Incorporating a cantilever design to protect gear alignment, the Syncrogear incorporates a one-piece base to absorb mounting stresses, to free the gear and motor of distortion. It's aimed for spots where dangerous fumes, flammable gases, explosives or combustible dusts are encountered. It's available in 1-hp. ratings with speeds ranging from 45 to 155 rpm.

Duct Joiner: Also in Los Angeles, Marman Products Co. is bringing out a new light-weight, high-temperature and pressure ducting-joint system. Tagged the J-21, it consists of two steel flanges to be welded to ducting, a self-aligning metal gasket to assure positive seal under pressure and temperature, and a V-band assembly using swivel action, which Marman claims makes for quick assembly. It was developed for use in conjunction with steam hot air and exhaust lines, but the maker sees no reason why it shouldn't fit in with many other industrial operations involving high temperatures and pressures.

New Face: A. E. Poulsen & Co. (Los Angeles) is being dissolved and the Poulsen Co. is being formed by Pres. Poulsen. The new firm will set out to engineer, manufacture and market equipment for chemical, feed and fertilizer industries.

New Filter Unit: The Denver Equipment Co. (Denver, Colo.) lays claim to a new filter unit it says is compact and efficient. As Denver sees it, the new unit incorporates several design features that should make it a natural for process industry applications.

Imported Centrifugal: The Pitmar Centrifugal Machine Corp. (Baltimore, Md.) is the U. S. (also Canadian and Central American) distributor for self-cleaning centrifugal separators made by the Titan Corp. of Copenhagen, Denmark. The separators are old stuff to other countries; Titan has been turning them out for 25 years. But, says Pitmar, American engineers have never had a chance to buy them. Advantage being pushed by the new distributor: ability to discharge sludge, regardless of viscosity, from the separating bowl either automatically or manually while the machine is running full tilt. Pitmar claims that this self-cleaning feature means that the operating speed is continuous, thus reduces production down-time for cleaning. The whole cleaning operation, it claims, can be completed in something under 10 seconds, simply by turning a 4-way valve a full 360°. It adds that maintenance costs are considerably lower than those of competitive machines.

Diaphragm Control: A San Francisco scientist, Ernest Stossel, has developed a system for pneumatically controlling actuation of a pulsating diaphragm. The system consists of a gas-filled, resilient bag whose inside pressure can be changed during operation. He sees it being used as a differential gas-pressure valve, vacuum breaker, resonant valve, air vibrator, gas pulsator oscillator, or as a pressure control valve.

Stossel has designed the device so that a continuous flow of air or gas is forced to convert itself to a pulsating one through the resilient gas bag attachment or gas trap. Volume and pressure changes in the confined gas control the performance of the diaphragm. A slight change in pressure inside the air trap causes a large variation in the pulsations. Stossel says that basic patent claims on his invention have been allowed.

CHEMICAL WEEK • ADVERTISING INDEX DECEMBER 5, 1953

ADVANCE SOLVENTS & CHEMICAL CORP.	37
Agency—Asher, Godfrey & Franklin, Inc.	
AIR PRODUCTS, INC.	40
Agency—Thoma & Gill, Inc.	
AMERICAN-BRITISH CHEMICAL SUPPLIES, INC.	36
Agency—Richard Lewis, Adv.	
AMERICAN FLANGE & MANUFACTURING CO., INC.	31
Agency—Friswald & Coleman Adv.	
AMERICAN MINERAL SPIRITS CO.	34
Agency—Leo Burnett Co., Inc.	
AMERICAN OPTICAL CO.	19
Agency—Sutherland-Abbott, Inc.	
AMERICAN POTASH & CHEMICAL CORP.	61
Agency—McCarty Co.	
AMERICAN RESINOUS CHEMICALS CORP.	36
Agency—Bennett, Walther & Measder, Inc.	
ATLAS POWDER CO.	45
Agency—Aitken-Kynett Co.	
BADGER MANUFACTURING CO.	30
Agency—Stevens-Pundt, Adv.	
BARRETT DIV., ALLIED CHEMICAL & DYE CORP.	60
Agency—McCann-Erickson, Inc.	
BEACON CHEMICAL INDUSTRIES, INC.	60
Agency—Mina Lee Simon Adv.	
BERKSHIRE CHEMICALS, INC.	28
Agency—Stevens Adv.	
BUFFALO ELECTRO-CHEMICAL CO., INC.	35
Agency—John Mather Lupton Co., Inc.	
CARBIDE & CARBON CHEMICALS CO. DIV. OF UNION CARBIDE & CARBON CORP.	T78
Agency—J. M. Mathes, Inc.	
CELANESE CORP. OF AMERICA	37
Agency—Ellington & Co., Inc.	
COMMERCIAL PETROLEUM & TRANSPORT CO.	B80
Agency—Laughlin, Wilcox, Baxter & Persons, Inc.	
COMMERCIAL SOLVENTS CORP.	52
Agency—Fuller & Smith & Ross, Inc.	
CORN PRODUCTS REFINING CO.	44
Agency—J. Hayden Twiss Adv.	
CORNWELL CHEMICAL CORP.	2
Agency—Picard, Marvin & Redfield	
DOW CHEMICAL CO., THE	31
Agency—MacMann, John & Adams, Inc.	
DU PONT DE NEMOURS & CO., INC. E. I., ELECTRO-CHEMICALS DEPT.	23
Agency—Batten, Barton, Durstine & Osborn, Inc.	
DU PONT DE NEMOURS & CO., INC. E. I., KINETIC CHEMICALS DIV.	30, 39
Agency—Batten, Barton, Durstine & Osborn, Inc.	
EASTMAN CHEMICAL PRODUCTS, INC.	76
Agency—Kanyon & Eckhardt, Inc.	
EMPIRE TRUST CO.	T80
EMULSOL CORP., THE	62
Agency—Edw. A. Grosfeld	
FINE ORGANICS, INC.	T74
FOSTER WHEELER CORP.	1
Agency—Richard & Co., Inc.	
GENERAL AMERICAN TRANSPORTATION CORP.	37
Agency—Weiss & Geller, Inc.	
GLYCO PRODUCTS CO., INC.	64
Agency—Sterling Adv. Agency	
GREAT LAKES CARBON CORP.	70
Agency—Davis-Persons, Inc.	
HALL CO., THE C. P.	48
Agency—Crittenden & Eger Assoc.	
HARDESTY CHEMICAL DIV.	3
Agency—Terrill, Holman, Marsh Assoc.	
HARSHAW CHEMICAL CO., THE	73
Agency—Munley, George & Woollen, Adv.	
HARTE CO., JOHN J.	10
Agency—Munley, George & Woollen, Adv.	
HILTON-DAVIS CHEMICAL CO., THE	9
Agency—Strauchen & McKim Adv.	
HOOVER ELECTRO-CHEMICAL CO.	41
Agency—Charles L. Rumrill & Co., Inc.	
HUNT MACHINE CO., RODNEY	35
Agency—John Mather Lupton Co., Inc.	
JOHNS-MANVILLE CORP.	14
Agency—J. Waller Thompson Co.	
KAY-FRIES CHEMICALS, INC.	56
Agency—Richard Lewis, Adv.	
KOPPERS CO., INC., CHEMICAL DIV.	6
Agency—Batten, Barton, Durstine & Osborn, Inc.	
LAPP INSULATOR CO., INC.	8
Agency—Edw. Wolf & Assoc.	
MAAS CHEMICAL CO., A. R.	34
Agency—Helms & Co., Inc.	
MARINE MAGNESIUM PRODUCTS	B72
Agency—Long Adv. Service	
MATHIESON CHEMICAL CORP.	25, 58
Agency—Doyle, Kitchen & McCormack, Inc.	
METASAP CHEMICAL CO.	61
Agency—Lewis, Williams & Saylor	
MICHEL & CO., INC., M.	T72
MONSANTO CHEMICAL CO., PHOSPHATE DIV.	75
Agency—Gardner Adv. Co.	
NATIONAL ANILINE CHEMICAL & DYE CORP.	21
Agency—James J. McMahon, Inc.	

NATIONAL CARBON CO., DIV. OF UNION CARBIDE & CARBON CORP.	40, 47
Agency—William Eady Co., Inc.	
NATIONAL ENGINEERING CO.	4
Agency—Russell T. Gray, Inc.	
NEVILLE CHEMICAL CO., THE	29
Agency—Wm. Cohen Adv. Agency	
NORTON CO.	13
Agency—James Thomas Chirug Co.	
OKLAHOMA PLANNING & RESOURCES BOARD	26
Agency—White Adv. Agency	
PERKIN-ELMER CORP.	7
Agency—Albert Frank-Quentier Law, Inc.	
PLAX CORP.	63
Agency—Charles Brunelle Co.	
READ STANDARD CORP.	33
Agency—W. H. Long Co.	
RUBBER PRODUCING FACILITIES DISPOSAL COMMISSION	65
Agency—Albert Frank-Quentier Law, Inc.	
SOLVAY PROCESS DIV., ALLIED CHEMICAL & DYE CORP.	2nd Cover
Agency—Atherton & Currier, Inc.	
SONNEBORN SONS, INC., L.	22
Agency—Hicks & Griest, Inc.	
STAUFFER CHEMICAL CO.	52
Agency—Hayes, T. Adv.	
TENNESSEE CORP.	50
Agency—Crawford & Porter, Inc.	
UNION BAG & PAPER CORP.	3rd Cover
Agency—Smith, Hagel & Snyder, Inc.	
UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS CO.	T78
Agency—J. M. Mathes, Inc.	
UNITED STATES POTASH CO., INC.	B78
Agency—McCann-Erickson, Inc.	
VULCAN COPPER & SUPPLY CO., THE	43
Agency—L. F. McCarthy & Co.	
WIEGAND CO., EDWIN L.	53
Agency—Smith, Taylor & Jenkins, Inc.	
WIGTON-ABBOTT CORP.	79
Agency—Rosen & Jacob, Inc.	
WYANDOTTE CHEMICAL CORP.	5, 66
Agency—Brooks, Smith, French & Dorrance, Inc.	

tracers SECTION (Classified Advertising) H. E. Hilly, Mgr.

CHEMICALS: Offered/Wanted	82 & 83
EMPLOYMENT	82
EQUIPMENT: Used/Surplus New For Sale	82
Wanted	82
MANAGEMENT SERVICES	82
BUSINESS OPPORTUNITIES	83

ADVERTISING STAFF

ADVERTISING SALES MGR.	B. E. Sawyer
ASST. ADV. SALES MGR.	R. S. Muller
BUSINESS MGR.	A. J. Mangold
Atlanta 3	Robert H. Sidor, 1221 Rhodes-Haverty Bldg., Walnut 8778-2283
Chicago 11	Alfred D. Becker, Jr., Steven J. Shaw, 520 N. Michigan Ave., Mohawk 4-5800
Cleveland 15	Vaughan E. Dimette, 1510 Hanna Bldg., Superior 7000
Dallas 1	James Cash, First National Bank Bldg., Prospect 7-5064
Los Angeles 17	Jos. H. Allen, 1111 Wilshire Blvd., Madison 6-4333
New York 36	Knox Armstrong, H. L. Brown, Charles Todaro, 330 West 42 St., Longacre 4-3005
Philadelphia 3	William B. Hannum, Jr., Charles F. Onasch, Architects Bldg., 17th & Sansom Sts., Rittenhouse 6-0670
San Francisco 4	Ralph E. Dorland, 68 Post St., Douglas 2-4600
Boston 16	350 Park Square Building, Hubbard 3-7160
Detroit 26	856 Penobscot Bldg., Woodward 2-1788
Pittsburgh 22	788 Oliver Bldg., Atlantic 1-4707
St. Louis 8	3615 Olive St. Continental Bldg., Lucas 4967

PRODUCTION.

For Severe Atmospheres: General Electric (Schenectady, N.Y.) has developed a new, totally enclosed, unit-cooled dc. motor for use in severe atmospheres. Billed as the smallest motor of its type, it's aimed for application in the chemical, rubber, paper and other segments of the process industries. It's available in hp. ratings ranging from 15 to 200, gives, says G.E., 50% greater heat transfer in a 37% smaller unit than previous models.

Facing West: Having completed financing arrangements, Kaiser Steel Corp. is embarking on an ambitious \$8-million expansion program for its Fontana (Calif.) rolling mills. The additional capacity is expected to boost production of steel plate, sheet and tin plate by 120,000 tons/year. It's a sign of the times for the West Coast, says Pres. Henry Kaiser; he figures the extra output will be gobbled up by the West's expanding, steel-hungry industry.

Cleaner Air: Both makers and buyers of equipment should be interested in the just-completed Chapter 10 of the Manufacturing Chemists' Assn.'s Air Pollution Abatement Manual. Prepared by American Cyanamid's R. J. Jenney, the chapter deals with methods of abating gases and vapors, also goes into the community relations significance of a program to reduce pollution.

Liquid Levels: W. E. Williams and E. Maxwell, of the National Bureau of Standards, report they have teamed up with the Brown Instrument Div., Minneapolis-Honeywell Regulator Co., to develop a low-temperature instrument for measuring, indicating, recording and controlling the level of liquefied gases like hydrogen or nitrogen. It's an electronic instrument that operates on the capacitance principle, makes use of the difference in dielectric constants of the liquid and vapor phases. It's built to be used interchangeably on hydrogen, nitrogen, oxygen or helium by changing the sensitivity and range controls on the associated electronic circuitry. Accuracy depends on the uniformity of construction of the capacitor and on the precision with which the liquid surface can be defined (in view of boiling, agitation and capillary effects that are frequently present). But, say the two NBS investigators, tests made with liquid nitrogen and with carbon tetrachloride in the sensing capacitors show an accuracy and linearity within 1%.

DOMINO SUGAR'S experience:

Multiwall bags make good carriers for retail units



The American Sugar Refining Company has for years been using Multiwall bags as shipping containers for shelf size packages of Domino sugar.



Union Bag was one of the first to supply paper bags for packaging sugar, and now manufactures Multiwalls for use as shipping containers for retail units of a wide variety of products.

Union's Packaging Service Department carries on a continuing research and testing program. Perhaps it can show you either a new use for low-cost, efficient Multiwalls in your business or suggest additional economies in your present Multiwall bagging operation. Why not check on this helpful service this week?



MORE SO EVERY DAY, IT'S

UNION *for* MULTIWALLS

UNION BAG & PAPER CORPORATION • WOOLWORTH BUILDING • NEW YORK 7, N. Y.



MAKING BUILDING

BLOCKS

for Grown-up Boys

GENETRON® ORGANIC FLUORINE COMPOUNDS

"Genetron" 11	CCl ₃ F
"Genetron" 12	CCl ₂ F ₂
"Genetron" 11/12	CCl ₃ F and CCl ₂ F ₂ Propellant Mixes
"Genetron" 100	CH ₃ -CHF ₃
"Genetron" 150	CH ₂ =CF ₂
"Genetron" 170	CCl ₂ =CF ₂
"Genetron" 265	CClF=CF ₂
"Genetron" 226	CCl ₃ F-CClF ₂
"Genetron" 141	CHClF ₂
"Genetron" 316	CClF ₂ -CClF ₂
"Genetron" 131	CCl ₃ -CClF ₂

■ Today's organic chemists are modern miracle makers. Using molecules like building blocks, they have created plastics . . . pesticides . . . new petroleum products and other wonders. Ahead are many more.

For such capable hands, General Chemical research has developed the "Genetrons*," a unique series of organic fluorine compounds. They run the gamut in physical and chemical properties. They have applications as basic raw materials, intermediates, and as finished products.

For example, several "Genetrons" have present and potential uses as monomers for fluorine-containing polymers: one points the way to a synthetic rubber which remains elastic at sub-zero temperatures, another to industrial plastics capable of withstanding the severest abuse.

Still others make possible improved hydraulic brake fluids and superior coatings for electric wire. Some are also being utilized for vital military and scientific purposes, including atomic research.

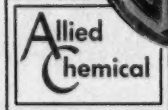
As finished products, "Genetrons"—such as "Genetron" 12 and "Genetron" 11—are important as basic refrigerants for all types of household, commercial and industrial refrigeration and air conditioning equipment. These and other "Genetrons" are also the dispersants that make possible the vast array of aerosols and pressure-propelled products on today's market.

For these—and countless other thought-provoking applications—"Genetrons" open the way to building new and better products for many producers. Why not investigate their possibilities in *your* program, too!

*Reg. U.S. Pat. Off.



Basic Chemicals
for American Industry



GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices in Principal Cities from Coast to Coast